



**sps|envirowall**  
TOTAL RENDERING SOLUTIONS

# System Built **Housing**

Unity

3rd Edition, 2010

## System Built Housing



### Unity

Following investigations by the Stewart Adams Partnership, the structural engineers appointed by Leeds City Council, a pilot scheme on Reema and Unity houses was put out to competitive tender in the Spring of 2005

An **sps|envirowall** approved contractor was able to provide the lowest tender to the Main Contractor J & G Seddon Ltd, and work commenced in August. Each house type presented problems, but the Unity house were soon found to require the most careful detailing and programming of the work. The Structural Engineer required the existing cladding panels to be removed in order that the reinforced concrete columns could be thoroughly inspected and treated to prevent further deterioration, and the **envirospan** panels were selected as the most suitable replacement. Once secured in place and rendered, the panels provide thermal insulation, racking resistance, acoustic insulation and a tough durable external finish.

The structure comprises of precast reinforced concrete columns at 915mm centres. The frame is lined to both sides with precast concrete slabs. Internally plaster finished but external faces are generally untreated. This type of construction utilizing a pressed metal ring beam at floor level and eaves meant that design was extremely flexible and could be used to provide small blocks of apartments over three storey.

This method of construction proved to be very popular and over 19000 Unity Houses were constructed. When the columns have been chemically treated, timber battens are fixed to the sides of them, allowing the **envirospan** panels to be fixed to them with staggered joints. The windows, previously fixed to the original cladding panels, were fixed to the columns using metal angle brackets.

Problems were encountered at the floor slab, which was found to be delaminating at the edges and presenting a very uneven surface. In order to seal this detail, and further reduce cold bridging, a 30mm thick layer of insulating render was laid between the back of the base bead and the blockwork. The installed system achieved a new "U" value of 0.33 W/m<sup>2</sup>K.

## System Built Housing

### Potential Problems

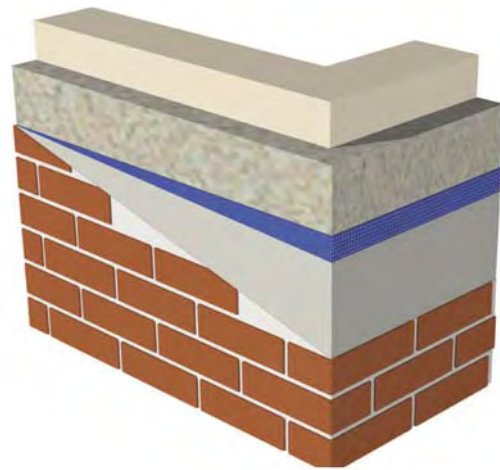
In general Unity Houses tend to stand up very well to the rigours of the British Climate and as such it is generally the case that they are structurally sound. However, there are cases where the copper ties that bond the facing precast panels to the framework have corroded. Therefore, it is essential that investigative testing is carried out to ensure that any problems are exposed and necessary remedial action taken prior to the undertaking of any external cladding works.

### Specification

To achieve 0.35 W/m<sup>2</sup>K,

- **Adhesive Mortar (5mm) - optional**
- **Insulation**
  - EPS – 90mm
  - Rockwool - 80mm
  - Phenolic – 50mm
- **Nylon Insulation Fixings**
- **Base coat (4mm)**
- **Reinforcement mesh**
- **Top Coats (2-15mm)**
  - Enviro**dash**
  - Enviro**brick**
  - Brick Slips
  - Eco**rend**/Granicem L Monocouche Renders
  - Enviro**sil**/Enviro**cryl** top coat

For a full technical consultation, survey and project specific report and specification please contact **sps|envirowall's** technical department.



Typical wall build up using SpeedySlip

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