

First seven storey light steel framed student accommodation

Metsec Building Products is supplying over £0.5 million of light gauge steel framing to build a seven storey student accommodation block in Glasgow.

It is the first time Metsec's panelised Metframe system has been used to create an entire seven storey building on this scale. Its high strength to weight ratio made it ideal for building off a steel transfer slab which provides underground car parking space and for withstanding high winds on the exposed site. Metsec designed the superstructure to comply with the requirement to resist 'progressive collapse' as specified in Building Regulations and to cope with wind loadings over 1kN/sq.m.

The Metframe system though was specified primarily because of Metsec's record in fast track build solutions, together with consistently high quality construction. Dry envelope stage on the 7,500 sq.m building was reached in 18 weeks by Metsec's approved installer Gyplok, allowing the block to open and house 400 University of Glasgow students from the start of the 2002 academic year.

All wall panels were pre-assembled off site with the external panels of 100mm steel stud pre-fixed with the required facing boards. The panels were then

bolted together on site. The structure was finished externally in a variety of claddings including brickwork and insulated render with the detailing of the panels adjusted to accommodate material thickness.

The Firhill project presented a number of design challenges including incorporating student bedrooms into an undulating roof which is curved along its length to create the effect of a wave. Metsec varied the heights of the external wall panels so that they followed the curve of the roof.

Metsec 'C'-section joists acted as purlins, spanning 8m across the building to minimise construction depth by removing the need for intermediate beams and so maximise the clear room space below.

To make the most efficient use of the available building space, a combination of Metframe loadbearing walls and hot rolled steel spanning over bedrooms that were turned through 90 deg. was used. These beams were kept mostly within the depth of the concrete floors to eliminate downstands and minimise the need for fire protection whilst allowing the compact storey heights required by the planners. Minimising storey heights also provided additional savings in time and costs for example of the external finishes.

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