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ENGINEERING

Warehouse for NEXT PLC at Doncaster

Client
Next plc

Contractor
Bowmer and Kirkland

Architect
PHP Architects

Steelwork Design
Caunton Engineering

Engineer
Adept Civil and Structrual

Steel Tonnage
4310 tonnes

The warehouse is a particularly high structure with a height to underside of haunch of 23.3m. Frames are arranged on a hit and miss basis with a distance between frames of 8m.

The main frame is 6 spans - 2 spans of 37.5m, 2 of 43.5m, 2 of 32m. The building is 320 metres long.

Due to the long length of the valley columns, they were designed as large plate girder sections that were then spliced with a bolted splice arrangement in the centre. The plate girders themselves were of varying weights to suit the design but were all 900mm deep and 450mm wide. The splice arrangement was a cap and baseplate which was designed to be used in the temporary state to assist erection with a bolted flange plate arrangement with HSFG (TCB) bolts for the permanent splice once the frame was lined and leveled.

There is a steel framed 4 storey office to one end of the building and a hub office to the middle of the structure.

There are a number of stair towers that project externally from the main structure to give access and escape from the mezzanine floors. Due to the height of the building a number of these were designated as fire-fighting access. The fire service required a firefighting lift installing and the stair structure needed to be structurally stable if the warehouse collapsed to allow escape within the designated protection period.

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