

Airport Hangar Roof Lifting Manchester Airport

Client: Qualitair Aviation

Consulting Engineer: Parkman Consulting Engineers

Main Contractor: Costain Construction Ltd

CIVIL 10



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Above: Four of the eight L50 strand jacks arranged on one side wall connected to the roof panel below. All eight jacks in the jacking system were synchronized by one power pack placed at ground level.

There are numerous advantages in fabricating roof trusses at ground level and lifting the completed sections to their final position using strand jacking techniques.

At Manchester Airport, Qualitair Aviation contracted Costain to build a new £15m hangar of a size big enough to house four A300 Airbuses. The roof, dimensioned at 108 metres long and 100 metres wide, was fabricated in 4 sections, the heaviest section weighing 330 tonnes.

Steelwork Contractor Robert Watson decided to use this erection method and contracted Fagioli psc to provide the lifting service to raise the sections to their final height of 23 metres. 8 No. L50 lifting jacks, each jack using 3 No. 18mm dia cables, were positioned on top of the columns. Using an L9/7.5D power pack, the roof sections were raised at a rate of 13 metres/hour by the jacks automatically synchronised by the control module.

The hangar is typical of the size of structure that Fagioli psc can help in offering cost effective alternatives to traditional erections methods.