

Aviation Group News



by Roger Smith

A dramatic new signature adorns the skyline of Heathrow with the first section of the Terminal 5 roof structure successfully raised into position. Standing proud at 39 metres above ground level, London's latest permanent landmark signals the most visible progress yet on Europe's biggest construction project.

It took a team of 12 specialist engineers 10 hours to lift the first 2,500 tonne section of the spectacular single-wave roof into place, which gives passing drivers on the world's busiest motorway (M25) their first glimpse of the future of travel at Heathrow.

It will take five similar lifts between now and the end of the year to complete the construction of the 18,500 tonne roof, creating the Terminal's giant outer shell. When complete, Terminal 5 will be the largest single span building in the UK, and at 39 metres high and over a quarter of a mile long, the total floor space would cover 50 football pitches.

Designed by the Richard Rogers Partnership and engineered by Arup, the spectacular roof structure is closer to bridge building than conventional construction. The single wave effect is created by 22 steel box rafters forming perfect bow string arches supported along each side of by 11 pairs of giant steel support abutments.

The same specialist 'strand jacking' technique is being used to lift this giant structure as was used to hoist London's Millennium Eye and will soon be used to raise Wembley Stadium's new arch. This vertical lifting method was chosen for Terminal 5 because the height limitation of 43 metres imposed to prevent any interference with Heathrow's radar systems, ruled out the use of cranes. It also has the added benefit of minimising working at height.

Commenting on the successful lift, Terminal 5's Design and Development Director, Mike Forster said:

"The T5 roof is a magnificent piece of design and engineering. Like the great structures created by Brunel it will stand as fitting tribute to 21 century British engineering. Lifting the roof and seeing T5 rise from the ground marks a tremendous milestone for the project and it's a tribute to everyone involved that we were able to achieve this lift bang on schedule and without incident or injury."

Terminal 5 is one of the largest construction projects in Europe. Huge and complex, the £4bn programme includes the construction of a main terminal, 47 aircraft stands, two satellites (one in phase 2), a new control tower, the creation of a new spur road from the M25, the diversion of two rivers, and over 13.5km of bored tunnel and rail links (including extensions to the Heathrow Express and Piccadilly Line services) a 4,000 space multi storey car park and a hotel.

The T5 programme is over one third complete and right on schedule to open as planned in Spring 2008.



Terminal 5 - The Facts

- ◆ Terminal 5 is an additional passenger terminal which will supplement Heathrow's existing four terminals, allowing the airport to grow in the future and enhancing BAA's ability to provide high quality customer service.
- ◆ The site for the terminal is within the airport's perimeter road, between the two existing runways on land currently occupied by the Perry Oaks sludge works.
- ◆ There will be a core terminal building and two satellites. Associated facilities such as car parking and a hotel are planned.
- ◆ Terminal 5 is designed to be a world class public transport interchange served by the Heathrow Express and London Underground's Piccadilly Line.
- ◆ A spur road off the M25 directly linking the terminal to the national motorway network will ensure the impact of additional traffic on local roads will be minimised.
- ◆ Over an estimated five to six-year period some 6,000 construction jobs will be created.
- ◆ The terminal has been designed to accept the most advanced aircraft including those not yet in service such as the Airbus Industries A380.
- ◆ Terminal 5 will have the capacity to accommodate around 30 million passengers.
- ◆ T5 and its associated facilities will be funded by BAA, not the taxpayer.
- ◆ The site for the main terminal building, satellites and associated aircraft stands covers 260 hectares, which is just under one quarter of the 1,200 hectares occupied by Heathrow currently.
- ◆ As part of the Terminal 5 development a new state-of-the-art control tower will be built, measuring 87 meters high it will be designed to meet the demands of Air Traffic Control at Heathrow in the years ahead.