

Heathrow Airport Fast



Heathrow Airport quite probably holds the highest concentration of mobile phone users in the United Kingdom and arguably has the highest security regime outside of the royal and political sector.

Spearheaded by North London Construction Controller Charlie Farrar and in close conjunction with contractor, Gresham Construction, and designer Interserve, a plan was devised to complete full coverage of all terminal buildings prior to 03/03/03.

Following the initial rooftop surveys, outline proposals for each scheme were drafted. In essence three sites were similar, Terminal 4 (airside), Terminal 3 (airside) and Queens Building would comprise of three antenna frames either freestanding or fixed to existing handrail. Equipment cabinets would be placed on either steel grillages or internally and linked to the antenna with in excess of 150m of cable tray per site and LDF 7-50 feeders. The power would be tapped from existing switch rooms, in the case of Terminal 4, 160m away and all new build connected to the existing lightning protection system.

Genesis multi storey car park would be simple - a 'Gresham Structure' speed site, less the concrete blocks, with steelwork directly fixed through the existing concrete slab and under-plated. This would be the least of the worries.

Interserve was given a brief but very demanding instruction. 'Design all four sites in two days.' The short timescale was required for BAA approval prior to start and steelwork had to be procured to stand any chance of fabrication and galvanising within the project timescales.

The dates were met and BAA approval granted. That is with the exception of the simple Genesis car park, as the car park management did not want to lose three parking spaces. This led to the rapid development of the 'Farrar' speed site. A scaffold tower tied into the stairwell cladding with antenna mounted on the standards, feeders clipped on the outside and Node B at the base occupying a footprint no more than 3.0m².

Gresham Construction, acting as principle Contractor, were advised by the planning supervisor and BAA that each site would be classified as an individual project and would each require a full BAA Health & Safety & Quality and Environmental Plan.

They were handed numerous multi page documents containing:

- BAA Health, Safety & Environmental requirements for supplies (February 2000).
- Emergency preparedness on BAA projects.
- Heathrow Airport Bylaws.
- Environmental Assessment Project Guidelines.
- OSI 11/99 Procedures for Working Airside.
- BAA document database on Engineering Construction & Engineering instructions.

This was to be read and incorporated within a 73 page Health & Safety, Quality & Environmental project plan for each site prior to any works commencing.

Greshams had previously offered a 24 hour, 7 day a week service but did not mean that in a literal sense. How wrong they were!

48 hours later, and with tremendous team assistance from Mick Moore, the Health & Safety Director acting as planning supervisor, the plans had been completed and approved. Only the four on-site safety plans, crane checks, MS/RA and inductions to go!

The final link prior to commencement was that all operatives had to endure a 3½ hour classroom induction and written



Track Network Build for 3



examination prior to issue of temporary 3 day rolling passes. This in itself was quite an onerous task, forwarding thinking, obtaining names of all construction, rigging and commissioning, BT link and integration personnel and hoping they all bring their passports was somewhat trying. Needless to say, several revisits were required.

In addition, although 'passed up' every operative had to be accompanied by an escort whenever airside with four sites on the go, simultaneously this was a logistical nightmare but with assistance of additional escorts the problems were resolved and the sequence started to flow.

After the three major hurdles had been overcome, and whilst the legals were still being printed the construction planning commenced.

In real terms there were only 9 days left to completion and still four sites to build.

The critical path to all four sites revolved around the crane lifts. BAA generally requires 12 days notice prior to any closure or lift operations. Several 'pulled strings' later the plan was starting to come together. We were granted four consecutive nights crane lifts each with a working window from 11.00pm until 4.00am. Terminal 3, Sunday 23rd, Terminal 4, Monday 24th, Queens Building, Tuesday 25th and Genesis Car Park, Wednesday 26th.

Each lift was with a 50 tonne mobile crane, complete with the usual entourage of slingers, banksman, traffic management, pedestrian management plus a swarm of operatives in fluorescent jackets to close off and evacuate the terminal buildings during lift operations. A 24-hour rotating rigging gang, followed by commissioning and integration teams, would follow each lift. In theory the plan would work but fingers, arms and legs were crossed for a 'wind free' week.

One of the major difficulties at Terminal 3 and Terminal 4 was lifting all material including 750 feeder drums and hundreds of paving slabs to the roof level without placing any load on the flat roof. Suspending a certified material basket over the roof and physically manhandling the pavers into their fixed location overcame this.

The feeder drums were suspended above the roof with the use of a solid steel bar, which had to be expressly tested and certified to a SWL of 500 kg. This was passed through the



centre of the drum to act as a spindle and strapped and clamped at each end. Once at roof level the spindle was held, the chains pulled and the drum rolled whilst the feeders were being run directly across the roof and into position.

The next stage would be procurement of materials and free issue deliverables. Every item airside would have to pass through vigorous security checks and would have to be escorted through security control with approved BAA drivers and on BAA approved vehicles.

These were sourced, along with two 1½ tonne tipper trucks and a remote lock up warehouse in which to deliver all equipment. At one stage, this comprised of 4 Node Bs, four plinths, 4 sets of steelwork, paving slabs, 12 antenna, 4 battery boxes, dozens of feeder boxes and fittings, MHAs and in the region of 16 feeder drums.

At 10pm each night the wagons were loaded with all appropriate material and equipment for the night's lift and delivered direct to site for lifting.

As you will soon gather, all four lifts went like a dream, not only under the watchful eye of the BAA Health & Safety Manager but in fact with his commendation. The deals had been sorted and Ts crossed, only one thing left to do ... flick the switch and all sites were alive and kicking... two days early!!

"Anyone for Gatwick?"

A big thank you to all those involved. Enjoy your sleep!!!

