

PROJECT CASE STUDY

HEATHROW AIRPORT FUELLING INSTALLATION, TANK DECOMMISSIONING, & INTERNAL CIVILS WORK





REDS has recently successfully completed a specialist fuels infrastructure project for British Airways PLC (BA) at their Fleet Support Unit (FSU) hangar, located within their operations base area at Heathrow Airport.

The project formed a critical enabling works package associated with the planned replacement of the FSU hangar doors.

With two of the senior leadership team at REDS having extensive experience of working at Heathrow Airport, we were able to demonstrate our deep understanding of the requirements of working in an airside environment during the tender process.





DUE TO THE TIME CRITICAL NATURE OF THE PROJECT, THE THREE ACTIVITIES NEEDED TO BE UNDERTAKEN CONCURRENTLY. CAREFUL PLANNING, DETAILED PROJECT MANAGEMENT AND LIAISON WITH A RANGE OF STAKEHOLDERS WERE REQUIRED THROUGHOUT THE WORKS.

PROJECT SCOPE

The works comprised of three main activities:

1. Provision of a replacement fuelling station to serve BA Engineering vehicles and equipment. This comprised the construction of a new, above ground containerised fuelling station on an area of airside apron to the immediate north east of the FSU hangar. This included the installation of a new fuel tank and dispensers, associated new power supplies and control wiring, alarms, valves and gauges. The tank installation also required the construction of dedicated drainage systems, new oil/water interceptor and connection to existing airport drainage systems, floor ducts, bunds, line markings and vehicle protection barriers.
2. Decommissioning of the existing fuel storage and delivery system located at the front of the FSU north doors. Works included the removal of the existing diesel fuel tank fill cabinet, fill point and dispensing pump and then in-filling the existing below ground fuel tank.
3. Construction of a new below ground installation comprising specialist equipment designed to provide power to aircraft (specifically the Airbus A350) being worked on inside the FSU hangar. This was referred to as the 'nose pit' and required construction of a below ground chamber for the equipment, and new ducts for provision of new 400Hz cable connections. New power cables and compressed air connections were also installed to an existing centre pit structure in the centre of the hangar, via existing duct systems.

PROJECT WORKS

SITE SET UP

The pre-enabling plans for this project were complex, with several key elements required to allow works to commence. We were able to draw on previous airside works experience and relationships to allow pre-enabling planning to be completed efficiently.

We liaised with Heathrow Airport Ltd (HAL), establishing REDS on their CMO Airside Works Application platform to allow submission for all relevant airside works approvals. Applications for service clearance approval could then be made to the various stakeholders to allow issue of a Works Approval Notice for all excavation work.

Following a detailed review of the proposed construction area and constraints relating to existing below ground utilities and chambers, several design changes were required. We worked closely with BA's Principal Designer to resolve identified conflicts and issues on site.

Site access involved the reconfiguration of an existing airside barrier. We liaised with BA security teams for approvals to break the existing barrier, construct an access gate for the construction site and manage security aspects relating to the management of key holders for the gate.

Close liaison was required with the BA Engineering team to agree working procedures, program of works and contingency measures associated with the planned works inside the FSU hangar.

Although REDS was appointed as Principal Contractor, all works were completed under an Authorisation to Work permit, issued by BA's facilities management contractor. Additional BA permit to work systems were required for all works involving FSU electrical works, fire systems or crane lifts and we liaised with the facilities management team to agree procedures and processes that would be required.

All project staff required the issue of BA Security passes to enable access to the operations base area. Key staff also undertook BA airside driver training to allow vehicular access to the site. Procedures for site deliveries, provision of temporary passes and security access arrangements were discussed and agreed with BA.





BRITISH AIRWAYS

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FUEL

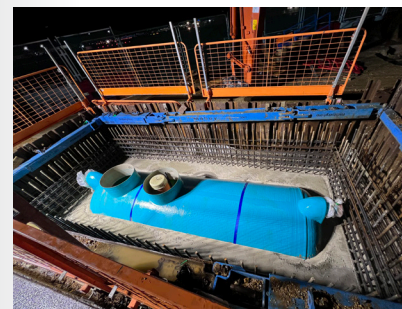
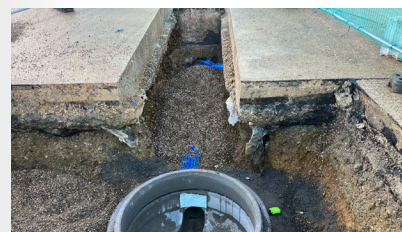
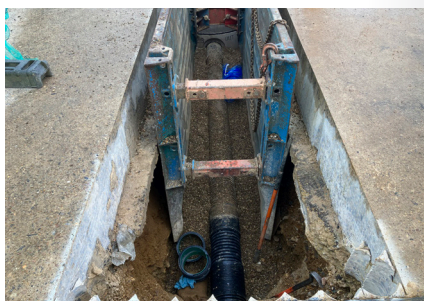
PROJECT WORKS

CONSTRUCTION OF NEW FUELLING INSTALLATION

Establishment of the main works area comprised the construction of a new gated access route, closure and handover to REDS of an existing aircraft stand, and isolation of the construction site using airside approved traffic barrier systems.

The construction area was surveyed and all existing below ground services were identified and marked out. Final set out of the location of the new fuel tank, oil/water interceptor and drainage trenches was completed, taking into account site constraints relating to existing utilities.

Specialist concrete cutting of the existing Pavement Quality (PQ) concrete was required and completed by airside contractor partners. The pavement concrete was found to extend to >800mm thickness in places and mass concrete obstructions were also encountered.



The connection to existing airport drainage systems required excavation of >55m of trench from the proposed location of the new tank installation, with the construction of four access chambers. The drainage trench work and connections to existing airport drainage was completed early in the works program to allow us to hand back the aircraft stand to BA for use as soon as possible.

Installation of the new oil/water interceptor required construction of sheet piled temporary works, ensuring control of the shallow groundwater present under the site and safe installation of the interceptor vessel and associated penstock control valves.

The tank foundations were then constructed and new dedicated drainage system installed and connected to the interceptor.

Construction of the required new duct work for the tank power supply, control systems and gauges required careful planning, as the new ducts passed under and over existing utilities. Liaison with each utility provider was required to secure the required permits and airside works approvals. Electrical connections and the new power supply distribution boards were installed by REDS specialist electricians.

The new fuel tank was then installed, the surrounding PQ pavement area reinstated and road markings installed. The fuel tank was commissioned and tested, before being handed over to BA and officially opened for use.



PROJECT WORKS

DECOMMISSIONING OF OLD FUELLING INFRASTRUCTURE

Once the new fuelling installation was fully commissioned and in use, the former fuel islands and below ground tank located in front of the northern doors of the FSU hangar was decommissioned.

The former fuel dispenser was disconnected and removed. We then broke out the former fuel island and associated dedicated drainage gullies before reinstating the concrete pavement.

REDS environmental consultants attended site to complete soil verification sampling from under the former fuel island and confirmed no residual soil contamination was present that might require additional assessment or remediation.

The former fuel tank and lines were drained down and cleaned. We then decommissioned the tank in-situ by filling with foam concrete.



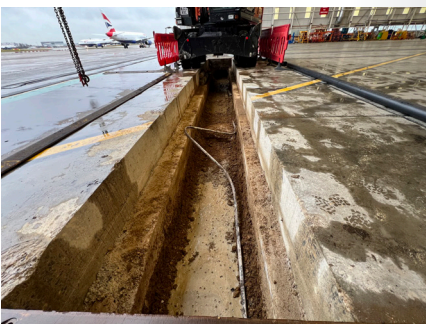
PROJECT WORKS

NOSE PIT INSTALLATION

Although not the largest part of the project, the additional works inside the FSU hangar required some of the most careful planning as the hangar was always operationally live for aircraft maintenance. Works sequencing was critical, and we worked closely with the BA Engineering teams to plan each section of the required excavations.

The main nose pit excavation was required ~25m inside the southern door of the FSU hangar and comprised an excavation of ~2.5m x ~5m, extended to 2.5m depth. Ducts were then required to provide new electrical cable connections to the new nose pit from two existing chambers located close to the southern hangar door.

The FSU hangar floor comprised 800mm thick concrete pavement and, again, specialist airside concrete cutting techniques were required to allow construction of the various excavations.



Contingency measures were employed throughout the hangar works, with aircraft rated steel plates, provided to us by BA, available to cover open excavations at the end of each work shift as required.

The specialist airside equipment housing was installed in the excavation, ducts constructed and electricity cables drawn through to the new nose pit. The concrete hangar floor was then reinstated.

Final works inside the hangar comprises provision of new electricity cables and compressed air supply to an existing chamber.





PROJECT WORKS RESULTS

The dedication and detailed project management, alongside the collaborative efforts of our diverse teams, were instrumental in the successful completion of this major aerospace project.

Our proven track record within the aerospace environment, combined with an in-depth understanding of project requirements, exceptional problem-solving skills and remarkable adaptability, ensured this complex job was delivered to the highest quality standard while prioritising safety at all times.



REDS GROUP

CONTACT US

At REDS, we believe our people are our strongest asset. Our in-house proficiency and experience ensure that all projects are delivered in accordance with current legislation, on time, within budget and often exceeding expectations.

For more information about any of our services, or to obtain a quotation for your project, please call us on **0333 444 0004** or email **contact@redsgroup.co.uk**

ACCREDITATIONS

REDS Group are proud to be UKAS ISO 45001, ISO 14001 Certified and ISO 9001 Certified.





**RESPONSE, ENVIRONMENTAL
& DECOMMISSIONING
SERVICES**

