

Manchester International Airport

Transformation project

Turnkey Solutions

Project PP16 - Case study

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# Manchester Airport Transformation Project

## Case Study - project PP16

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### Project Key Facts

**Client Name** | UK Power Networks (UKPN)

**Location** | Manchester International Airport , UK.

**Dates** | 2018-2019

**Total Project Cost** | £1.0m

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### **Relocation of substation D and fit out package**

The Manchester Airport Transformation Programme (MAN-TP) was geared at modernising and transforming the customer service experience. The programme comprised of a series of enhancements that will provide customers and airline carriers, with facilities and services that are state-of-the-art. The initial main focus was with terminal 2 which on completion has doubled in size.

Huge challenges were identified that were associated with this ambitious project. One of which was to ensure the airport remained operational during the construction phases, and it was therefore vital that the main contractor select the right teams for these specialised works. Having a wealth of in-house airfield lighting expertise and knowledge, and having successfully completed many complex airfield lighting projects the main contractor was confident that atg airports were the right choice for the implementation of this critical phase of the project works.



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### Airfield Lighting

To ensure the future resilience of the airfield lighting systems, and the critical operations of existing systems, a new substation had to be built in a more centralised location. ATG airports were awarded the contract to complete this critical change over element of airfield services, which included the diversion of all operational AGL primary circuits, from the existing Substation, B1D, over to the newly built D Substation. This work had to be completed while the airport was fully operational, which included a significant amount of aircraft movements, and subsequently had to be planned and co-ordinated meticulously with all stake holders, to ensure there was no impact to the operational requirements of the airfield.

Further to this, the migration works also included the relocation and commissioning of all existing CCR's from the old substation, B1D, to the new location. There was a significant risk associated with this part of the equipment relocation. The age of these CCR's was significant, and the manufacture could no longer support the equipment should there be some component failure, and technical support was also limited. Therefore, it was atg airports responsibility to ensure that each CCR was recalibrated and commissioned by atg airports engineering team upon completion of the relocation and installation works. Also, the control element of the CCR's which was via a communications network had to be established and confirmed to be operating correctly prior to the CCR's being fully integrated into the main AGL control and monitoring system.



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### Substation works

There were several other items that were also associated with the phase of this project which included:

- Positive identification of all existing AGL primary Circuits that were to be diverted
- Installation of over 200 AGL primary cables from existing substation to new substation routing through a directional drilled ducting underneath existing taxiway surface.
- Installation of 3 new multicore cables between substations that would carry DC control circuits
- Disconnection and relocation of existing four-way CCR cabinets
- Installation of over 200 AGL primary joint kits
- Strip out and removal of all redundant AGL cabling

Before completing any of the changeover aspects, the substation had to be readied for use. An integral part of atg airports scope for this project was the M&E fit out of the electrical infrastructure to support the relocation and transfer of all AGL services from the existing substation. All the included works associated with this fit out had to be supplied, installed, and commissioned in advance and include:

- All cable containment systems
- Small Power and Lighting systems
- Fire Alarm system
- Substation Access Control System
- LV Power Supplies to Switchboard and UPS system
- LV isolators and Switchgear
- LV Distribution
- Air Conditioning System
- AGL Control System Hardware
- LV Power supplies to CCR's



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