

Case Study >

PROJECT OVERVIEW

- Powercat 6 solution
- Over 23000 points
- 250,000 sq ft site equivalent to 24 football pitches
- 217 miles of cabling used in Phase 1 alone

Molex Flying High with NATS Project Win

National Air Traffic Services (NATS), a world leader in air traffic management, prides itself on being at the forefront of its industry with regards to technological and business development. A reliable data transport system that could respond to future technological demands was therefore an essential requisite for the construction of its new Corporate Headquarters in Solent Business Park in Hampshire, UK.

About NATS

NATS provides “en-route” air traffic management services to the majority of aircraft flying in UK airspace, over the eastern part of the North Atlantic and the western North Sea. It also provides airport traffic control services to 15 of the UK’s major airports including Gatwick and Heathrow. In 2005, the company handled more than two million flights carrying over 220 million passengers. By 2013, NATS is committed to providing capacity for 3 million flights per annum.

Corporate & Technical Centre (CTC)

Following the impact of the World Trade Centre attacks on the global travel and tourism industry, NATS needed to restructure its business to reduce outgoings in the short term, whilst planning for increased long-term demand. A critical part of NATS’s strategy to achieve this was to initiate a £1 billion investment programme, used to renew and upgrade their principal facilities as well as rationalise certain areas of the organisation. This gave birth to the idea of building a new Corporate & Technical Centre, into which staff will be relocated from its central London headquarters, two centres in West Drayton and Gatwick, as well as providing offices for technical staff from five other bases in the south east.

Acting as the company’s headquarters, this multi-million pound site, spanning the equivalent of 24 football pitches and housing almost 1,000 staff meant that the successful Molex Certified Installer had a mammoth task ahead of them. The construction of the centre was implemented in three phases. Phase One consisted of three interconnected three-storey buildings, for which Molex provisioned 217 miles of cabling. Phase Two and Three then involved the addition of two more interlinked buildings and additional works carried out to complete the site, which totals over 250,000 sq ft.

The Project

In June 2003, NATS and Hoare Lea Communications, vendor independent IT Consultants, evaluated the possible cabling solutions for the project and specified a Molex PowerCat 6 UTP cabling system for the site. In addition to the utilisation of a Molex Category 6 Copper system, Hoare Lea also recommended the use of a Molex optical fibre system in the deployment of the backbone infrastructure. By selecting both Molex copper and optical fibre products for use at the site - when



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installed by an experienced Molex partner - NATS understood that the site would be supported a by full 25-year System Performance Warranty, thus guaranteeing the integrity of NATS' communications network - an important pre-requisite for the build.

Jeremy Hall, Information Solutions Project Manager with NATS said: "Every system we implement within the Corporate and Technical Centre needs to meet the technologically demanding challenges of our business. They have to be of the highest standard and sophisticated enough to cope with future developments, and we are confident in Molex's ability to deliver this in Phase Two, just as they did in Phase One. Phase Two of the new NATS headquarters will house project engineering and strategic systems development, as well as providing operational support to the Swanwick and Prestwick Centres. The final touches are being made to the interiors of the new buildings and the IT infrastructure is now being installed."

After a competitive tender process, Comunica Ltd were selected by NATS and the Main Contractor to carry out the installations for both Phase One and Phase Two of the installation. A fully-trained Molex Certified Installer, Comunica have a long track record of delivering major projects with Molex products and are recognised as one of the of the UK's leading communications installation companies. In their project proposal Comunica defined how they would deliver the requirements of NATS both in accordance with the client schedule and specification. After a period of consultation between NATS, Molex, Comunica and Hoare Lea Communication, the detailed design for the cabling infrastructure was produced and the Comunica project team was assembled.

Comunica deployed a comprehensive on-site project team consisting of a Project Manager, Floor/Logistics Managers and a dedicated installation team. In addition to the Comunica project team, Molex committed to NATS that technical specialists would audit the site at key project milestones throughout the installation, a process that was managed by the UK Warranty Programme Manager, Andy Walls. Direct interaction with the end-user is one of the key benefits of the Molex proposition, and NATS benefited from the close working relationship that Molex maintains with its Certified Installer Partners. The Molex Certified Installer programme ensures that projects such as NATS are delivered in accordance with Molex installation best practices, and that the end-user benefits from a robust system that can meet their needs both now and in the future.

System Design

The NATS' Corporate and Technical Centre consists of five buildings, interlinked with Multimode optical fibre cables that connect fifteen Satellite Communications Rooms serving floor areas with four Main Equipment Rooms. Main Equipment Rooms are connected to the Satellite Communications Rooms with forty-two 8-core multimode optical fibre links. These links are diversely routed to ensure



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total resilience in the event of a fibre link being accidentally cut, or worse still the occurrence of a disaster event such as a fire. This means that even in the event of a portion of the fibre backbone being damaged, communication between the various Communications Rooms can be maintained by re-patching and employing an alternative fibre route. This is critical to maintaining continuity of IT services throughout the buildings in the event of a disaster and minimising the risk of down-time from any minor accident.

The five connected buildings at NATS are populated with 23,000 Molex PowerCat 6 UTP outlets. In the work areas, these outlets, along with Power Points, are presented to desk mounted boxes. To maintain safe separation between the Power Cables and Category 6 UTP cables, all Molex Category 6 cables were installed to the desk box locations within screened flexible conduits – eliminating the risk of Electromagnetic Interference from the power cables affecting data transmission. Each desk box is fed from an under-floor Consolidation Point – a bank of outlets permanently fixed to the floor in a Presentation Box. These boxes are cabled back to a Molex PowerCat 6 Patch Panel in the local Communications Room. This Consolidation Point architecture enables flexibility for future use, and allows longer or shorter cables to be installed between the consolidation point and new or relocated desk locations without re-installing a new cable all the way back to the Patch Panel.

With future proofing in mind, a Molex Laserstream™ Blown Fibre duct system was also installed. The Molex Laserstream Blown Fibre system utilises a system of empty plastic ducts that are installed from the Communications Rooms to areas where optical fibre connectivity is required, or may be required in the future. Specially coated optical fibres, of whatever performance class is needed, can then be fed into the ducts utilising an air compressor and drive-wheel assembly. This system allows anything up to 12 optical fibre cores (known as ‘bundles’) to be ‘blown-in’ to each duct, up to a distance of 1000m.

NATS recognised that its technology-rich environment could require fibre connectivity to desk areas at some point in the life cycle of the buildings, and as such Comunica installed a system of empty Molex Laserstream tubes to every Consolidation Point location to ensure that any future deployment could be made without disruption. Unlike installing traditional fibre cables as an addition to an existing system, NATS will only require the installer to access to the Communications Rooms, and far-end of the duct, as and when optical fibres need to be deployed. This may save NATS huge disruption and inconvenience in years to come.

The Outcome

The 250,000 sq ft site was completed this year and is now being used as NATS’ Head Office, which not only brings together technical staff from across the UK as mentioned above, but also homes the company’s senior management.

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“Staff have now moved in to Phase Two of the Corporate and Technical Centre (CTC)” says Jeremy Hall. “The cabling assists in office IT across the five buildings including VoIP telephony.”

Andy Walls, Warranty Programme Manager, Molex Premise Networks, also comments: “We’re confident that the new cabling system will make a huge difference to NATS. Making sure information flows freely and easily across its network is critical especially when safety is paramount.”

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