

Nexperia

Case Study



About

Nexperia are a global manufacturer with over 60 years' experience in the production of semiconductors, used in every electronic design in the world. With headquarters in The Netherlands and several locations across Europe, Asia and America, Nexperia employ over 12,000 staff and ship more than 90 billion products each year.

The Brief

Nexperia instructed Sudlows to design and build a new data centre facility at their site in Stockport following a competitive tender proposal. The client required their data centre to be located closer to their IT departments offices and operations and to be equipped with the latest technology to replace their legacy equipment.

Location:
Stockport, UK

IT Load:
30kW

Duration:
10 weeks

The Project

Sudlows worked closely with Nexperia's Site Facilities Team and developed the space planning of the room to provide a hot aisle containment pod of IT cabinets. In-row coolers were designed, selected and installed to maintain the environmental conditions within the space to provide N+1 topology to suit the 30kW IT load. A Computational Fluid Dynamics simulation of the space was modelled by our in-house CFD Team, to ensure that the room conditions and environment were maintained in the event of a failure scenario.

New critical power supplies were installed from independent LV switchboards to support the IT equipment with A and B power providing dual supplies to the cabinet PDU's, supported by the N+N UPS systems and associated electrical distribution. In addition to the critical supplies, a general power supply was installed to support the mechanical, small power and lighting services, this being supported by the site's DRUPS UPS system.



The critical mechanical and electrical equipment has been connected to the site wide Building Management System to provide visibility of the plant with the ability to send alerts to the site Facilities Team, using a Trend BMS, via a combination of Modbus and SNMP protocols.

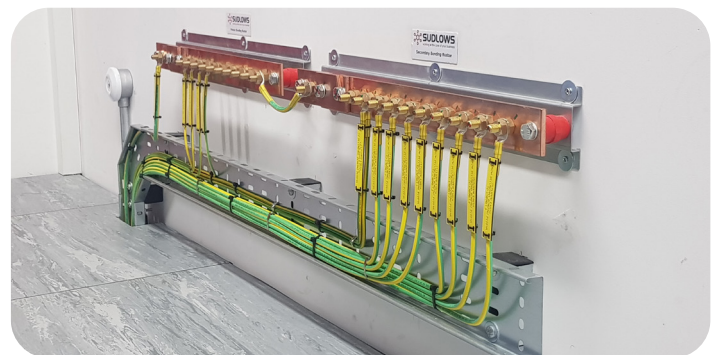
Intelligent rack mounted PDUs have been fitted to each IT cabinet to allow for remote monitoring and interrogation. The intelligent PDUs, together with the metered electrical distribution boards, allow the Power Usage Effectiveness (PUE) to be constantly monitored and recorded, allowing the customer to have full visibility of the efficiency of the data centre as well as assessing the load of each IT cabinet.

To provide connectivity between the various remote network cabinets throughout the site, Sudlows also designed a complete site wide containment system that saw over 450m of tray work being installed around various diverse routes on site. This allowed our in-house Connectivity Team to install new 24 core OS2 (9/125µm) and 24 core OM4 (50/125µm) fibre cables emanating from the new DC to each of the 24 remote network cabinets throughout the site and 48 Core OS2 (9/125µm) / OM4 (50/125µm) fibre links between DC1 & DC2. The installation of the fibre cables had its challenges due to the nature of the routes between multiple buildings, consisting of high-level containment through corridors, office & lab ceiling spaces, floor voids, and low ceiling basement areas together with external ducting. All fibre cables were presented onto high density LC patch panels within all cabinet locations and tested to Tier 1 standard.

Conclusion

Sudlows have designed and built this critical facility to be utilised by Nexperia that is highly resilient, efficient and secure within the site at Stockport.

The project was completed over a 10-week construction period ahead of programme and with having a transparent and open relationship with the customer, was delivered under budget.



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