



## New 800kW Node for Major UK Telecommunications Company Case Study

As a nationwide telecoms operations specialist, our client was challenged with building the 'next generation network' for the UK, capable of offering the speed, bandwidth and latency required to enable advancing technologies to perform, while simultaneously being challenged with accommodating rapid growth in demand, rising energy costs and limited real estate.

As part of this nationwide project, Sudlows were appointed as the specialist main contractor on a number of sites across the UK, including a large Greater London site. This particular project involved undertaking the complete design and construction of a new 800kW telecoms node within an existing facility.

The facility, located in outer London, also housed other primary nodes serving the area and other 3rd party operators providing critical services, so minimising disruption to site operations and services was critical.

The facility, located in outer London, also housed other primary nodes serving the area and other 3rd party operators providing critical services, so minimising disruption to site operations and services was critical.

The project was split across three floors of the multistorey building, with two separate white space areas of 400kW each, two dedicated A and B Power Plant rooms, and a dedicated external cooling compound.

The project included a wide range of technologies to enable the project to be delivered both in compliance with the customers bespoke specifications, and with the highest levels of efficiency.

Power systems included both 380V DC and 54V DC power conversion and distribution systems complete with integrated battery storage to provide autonomy in the event of grid failure. Alongside this, high efficiency static UPS Systems provided a similar resilience to the AC power stream.

Cooling systems varied by the space environment, with the primary high-density node being provided with a highly resilient and efficient, free cooling chilled water system, serving both a hot aisle contained air cooling system and additional connections for liquid cooled systems. Conditioned spaces requiring a lesser degree of control and accommodating a lower density of load were cooled via a direct air-cooling system, with an integrated inverter DX back up system allowing the system to operate in full free cooling, partial free cooling, or a fully closed loop, DX mode.

New primary cable routes were identified and installed within the existing building, and new cable risers formed as required to facilitate power to the new submain panels while ensuring minimal disruption to site operations and no disruption to service.

A new external compound was constructed incorporating both a high security fence line and substantial acoustic mitigation measures to comply with planning restrictions.

The complete project was designed and built by Sudlows, supported by our multidisciplinary in-house Engineering Team and our highly experienced dedicated Telecoms Delivery Team who, through careful planning and close co-ordination with the Client Team, ensured that the project delivered the much-needed increase in capacity, within the required timeframes, and without interruption or downtime.