## Case study

# Leeds City Council

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| Location | Leeds, UK |
| Value | £500,000 |
| Power | 700VA (N+1) |
| Duration | 12 weeks |

## About

**With a population of 750,000, Leeds is the second largest metropolitan district in England. Established in 1974, Leeds City Council Employs over 33,000 people and provides public services to one of the fastest growing cities in the UK.**

## The Brief

The council required an urgent replacement electrical power plant for the primary ICT data centre at Leeds City Council. Overall there was a critical restriction of electrical capacity to deploy new hardware within the data centre.

The Apex data centre was supplied by an aged electrical infrastructure. This infrastructure had been extended to over time, with little consideration for resilience and reliability or for best practice data centre topology.

This upgrade to a Tier 2 specification would provide power redundancy for the key ICT services provisioned from this particular data centre.

To ensure the data centre can provide the correct level of availability and redundancy, investment in the supporting electrical plant had been approved with Sudlows brought on board to assist with the power upgrade.

## The Project

The data centre was being supported by a legacy electrical infrastructure, which had evolved over time, but was not concurrent with the latest standards of efficiencies and technologies.

With such a highly critical environment, the efficiency and resilience of the upgrade was essential to avoid any kind of downtime. Therefore enabling the council to maintain and support the service provision for the population of Leeds.

Working in close collaboration with the infrastructure team at Leeds City Council, the Sudlows project team included a core group of specialist electrical and design engineers with experience in successfully delivering critical power upgrades in live and often challenging spaces.

Given the degraded conditions of the existing power infrastructure, every critical stage of the project upgrade, held the risk for a serious power failure. The skill in maintaining power levels and minimising risk came from detailed project planning and clear communication between both project teams.

> "The facility we received is first class and a real asset to the Council's operational effectiveness."

**Andy Hirst, Technical Director at Sudlows,** said;

"The challenge of this project was to deliver an upgrade whilst maintaining full operational status of the live data centre". **Andy added;** "With an increasing use by the local community for digital services it was vital that the facility was carefully designed to meet, not only this growing demand for digital access, but that these important services have a reliable as well as efficient power support system".

The scope of the project included an upgrade to the data centre/plant room power with increased resilience to N+1.

This involved the delivery of:

- New electrical supply: to support existing & future power demand of the building.
- 700 KVA diesel generator.
- New Low Voltage (LV) switchboard and isolation panel.
- New Power Distribution Units (PDU).
- Dual Feed Uninterruptible Power Supplies (UPS).
- Added scalability by extending the data centre power scheme to include two new rooms.
- De-commissioning and removal of obsolete and unnecessary equipment.

**Andrew Byrom, Support Services Manager for Leeds City Council commented;**

"Sudlows were successful in their tender for this essential upgrade at Apex House and we were immediately impressed with both their design expertise and on site engineering skills. Sudlows are not only excellent at the critical elements of the project delivery, but always ensured that myself and the rest of the council project team received regular and precise updates, at every stage of the programme."

"Overall the project was completed exactly as to our requirements and the facility we received is first class and a real asset to the council's operational effectiveness."

## Key Components

- Fully automated system in event of power failure.
- 24 hour backup in event of power failure via 700 KVA diesel generator.
- Connection established to a new 1 Mega Watt (MW) sub-station.
- Refurbished Plantroom.
- Fire Suppression system.
- Resilient dual Air Conditioning system.
- Capacity within the power scheme for 100% growth.
- Capacity within the data centre to install 20 additional cabinets, if required.
- Metering at the LV panel and PDU's to enable accurate monitoring of the energy usage on the critical and non-critical supplies.
- System fully upgradable to an A / B system with additional UPS devices, if required.


## Conclusion

With the new plant commissioned and fully operational, Leeds City Council are able to provide both residents and business' of Leeds with an effective digital provision for the present and any future expansion. The new infrastructure is both resilient and has sufficient capacity to handle any additional demands and is flexible to respond quickly and efficiently with no additonal impact on the current operations.



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