



# The Co-op Salford Data Centre

## Case Study



### About

Sudlows were invited to build a new green data centre, entirely independent from a number of The Co-operatives Financial Services Facilities that were already operating from the same site. This location was selected by The Co-operative Group as part of its programme to move to a new purpose built £100million Head Office. The new data centre is designed to be a highly efficient and sustainable development, whilst still achieving an impressive Tier 3 resilience.



**Value:**  
£4.4 million

**Size:**  
200m<sup>2</sup> approx

**Duration:**  
3 months

# Primary Components of the Data Centre

## Electrical

### KST Flywheel UPS system:

2 x 500kW EDRUPS with N+1 resilience and provision for future expansion for another 2 x 500kVA units.

### Standby Generator System:

2 x 1000kVA SDMO units with N+1 resilience and provision for further expansion for another 2 x 1000kVA units.

KST, the manufacturer of the Flywheel UPS system, have achieved ECA accreditation. This makes our installation of the Salford data centre system the first of its kind in the UK to achieve the accreditation. This has created a Tier 2 data centre with provision and availability on the LV and distribution to convert to a Tier 3 Distribution System allowing concurrent maintainability.

## Controls

### Features:

A number of new resilient BMS control panels have been installed at the Salford Data Centre, each MCP (Mains Control Panel) contains Trend Building Energy Management System Controllers. These controllers are networked to allow access for monitoring and alarm retransmission.

The system operates on an HVAC Panel A B set up with the Cooling Tower on a Panel C to provide the ultimate resilience.

The system provides The Co-operative with full graphical displays of the plant operating temperatures with detailed alarm and sensor configurations.

## Cooling

### Low/Medium Density Data Hall Features:

Adiabatic Evaporative Coolers (Ecocooling) which can support the Data Hall for the majority of the year providing a significant increase in efficiency.

3 x 80kW Airedale DC Units incorporating N+1 redundancy, providing critical backup to the adiabatic system and a marked improvement in resiliency.

### High Density Data Hall Features:

18 x uSystems Rear Door Coolers - cooling up to 40kW IT load per rack.

2 X 40kW Airedale Chilled Water Downflow units, arranged in N+1 configuration, to absorb other room loads introduced through fabric heat gains, occupancy etc.

### Central Chill Water Plant Features:

1No, Baltimore Aircoil Cooling Tower operating for the majority of the year, providing an increase in energy efficiency.

2 x 500kW Airedale Deltachill Chillers also incorporate N+1 redundancy for critical backup of the cooling tower system, ultimately producing a much more resilient facility.

Higher operating chilled water temperatures (18/23°) to facilitate low energy cost cooling for a maximum amount of time, achieving the target PUE of 1.2 or better.

Primary and secondary chilled water system incorporating N+1 primary and secondary pumps.

De-aerator and dirt separator units to ensure clean water, reducing maintenance requirements and resulting in a subsequent increase in long term reliability.

## Fire Suppression

### Features:

Environmentally friendly Argonite C60 IG55 inert gas fire suppression, with a Zero Effect on the atmosphere and environment if discharged.



## Conclusion

With the completion of the new head-quarters expected to be completed on schedule the need to deliver an efficient, yet resilient data centre was both time critical and technically advanced. Both of these milestones were achieved by the excellent collaborative partnership philosophy adopted by all the project stakeholders.

## Testimonials

Data Centre Manager at Co-op commented;

“Sudlows brought a unique set of electrical skills and technologies to the project that impressed both myself and the rest of the project team. Their delivery of critical power to our new facility was flawless and well integrated with the additional major works on site. Sudlows engineers were able to perform a live changeover, with no downtime to this 2MVA facility, which was vital to the success of this scheme. Once again Sudlows prove their capacity to successfully design and deliver major electrical projects.”



Director of Trading IS at Co-op added;

“Our new Data Centre facility represents the final piece of the jigsaw in relation to the complete infrastructure refresh, a three-year programme undertaken by The Co-operative Group. The Data Centre at Salford will become our primary site but will be twinned with its sister site at Rochdale. It is intended to provide resilience, flexibility and scalability. Selection of a partner to build the facility was key and trust was an important factor in the decision process and a primary reason for selecting Sudlows.

“The new Salford Data Centre will serve all of our businesses and the new head office. During the design and construction phase we have been very mindful of the environmental issues and have paid particular attention to ensure we complement the high environmental standards of our new head office being constructed in Manchester and due for completion in the fourth quarter of 2012.

“By defining what the business needs for today and its more immediate future, we have been able to strategically scale and deliver a modular built Data Centre. It has an infrastructure configured to allow disruption free growth, preventing eager over-provisioning of infrastructure capacity and consequential energy wastes, yet ensuring the rapid deployment of services is maintained.”



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