



# AO World

## Case Study



### About

Established in 2001, AO.com is the UK's largest online retailer of household appliances and currently has a product range of approximately 4,000 items. In 2014, AO floated on the London Stock Exchange and launched AO.de, which is based in Germany. It continued its European expansion with a new launch in the Netherlands in 2016.

### The Brief

AO World was looking to invest in supporting its growth with key infrastructure upgrades at the company's new Headquarters in Bolton.

The project brief involved the construction of a new Data Centre facility on the third floor of the Parklands building.

The proposal was based on a Tier II Data Centre design and utilises highly efficient DX cooling systems that can offer a potential annualised PUE of circa 1.39.

### The Solution

#### Installation

The new data centre was fitted with 8 x data cabinets installed in a cold aisle arrangement in 2 rows of 4 configuration.

The facility was created to deliver a data centre capable of handling a maximum IT load of 48kW.

The average IT load was configured on 6kW per rack for all 8 cabinets.

**Location:**  
Bolton, UK

**Size:**  
47m<sup>2</sup>

**Duration:**  
8 Weeks

## Electrical

- The data centre was fitted with a 250A Low Voltage (LV) electrical switchboard panel, automatic transfer switch (ATS), complete sub-main distribution breakers, with UPS bypass fitted with Castell interlock system.
- A new sub main cable from the existing LV switch room on the ground floor was installed along with a new 250A MCCB to supply the new data centre LV panel.

## Mechanical

- 3 x 25kW Sensible cooling capacity (2Run +1 Standby) air conditioning systems.
- The design of the mechanical cooling and air conditioning was selected with aspiration of achieving a PUE <1.39. To achieve this Sudlows installed innovative Air-Cooled DX CRAC units on an N+1 design philosophy.
- Each system delivers two stages of cooling on one refrigerant circuit controlled by tandem compressors. This ensures a better match to load and thus saves energy at low load conditions.
- All systems are downflow air configuration and supply cool air into the raised floor void.



## The Conclusion

With thousands of customers ordering on the website daily, it was critical that the design of the new data centre delivered resilience, capacity, and room for planned expansion. This design delivered on all three core aspects and is a model that AO look to replicate across a planned European roll out.

## Testimonials

### David Wilson, Head of IT Services at AO World commented;

“Everything we do at AO is driven by delivering an exceptional experience for our customers and because of this the physical wellbeing of our hardware estate is crucial as it underpins our ability to achieve this. Sudlows has designed an extremely adaptable facility that can be rapidly scaled up to support peaks in demand without any interruption to our digital platform or operational resilience.”

### Andy Hirst, Managing Director of Critical Infrastructures at Sudlows added;

“AO is one of the UK’s fastest growing e-commerce retailers. This new cutting-edge data centre is fundamental to maintaining their impressive growth and will ensure that the logistical and customer services departments have a robust platform to deliver their excellent service.”



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