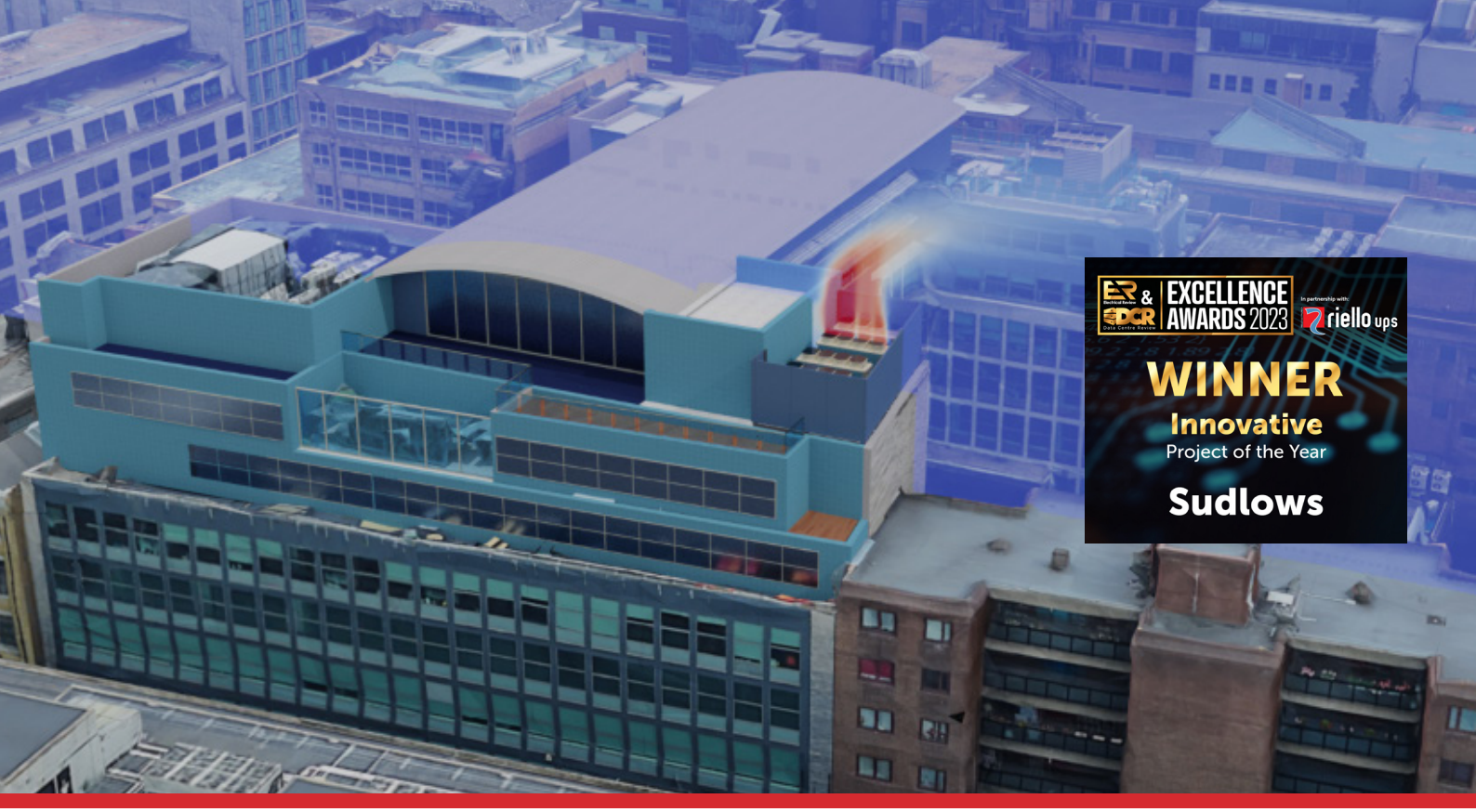


Critical Cooling Upgrade Project

iomart

Case Study

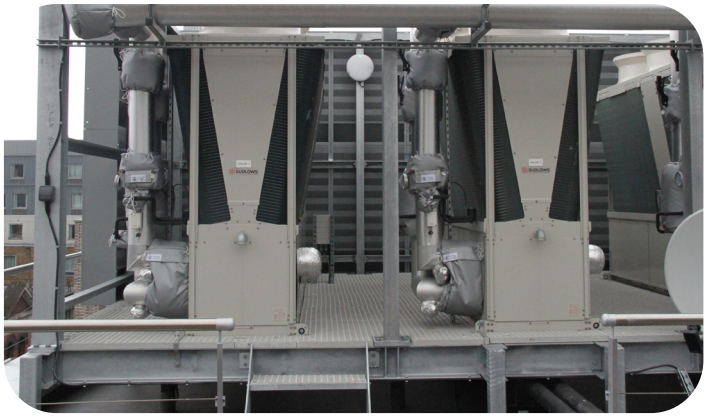
Overview

iomart are a world-leading cloud computing, managed services, and co-location provider who, as part of their global operations, operate 13 Data Centres in the UK, all connected to their own high speed dark fibre network.

As a publicly listed company with over £100m+ in annual revenue and growing, the business demands that its supporting infrastructure is of the highest resiliency while also supporting its ambitious sustainability and environmental goals.

A planned lifecycle upgrade for one of their existing facilities was due and initial design works had been completed to provide the facility with new cooling infrastructure, offering higher efficiencies and a greater level of resiliency for the facility overall.

Sudlows were appointed to deliver this significant upgrade. Our highly experienced Data Centre Design, Engineering and Construction Teams worked closely with iomart, their Designers, and their site Operations Team to ensure the project was completed smoothly with minimal impact to the operations of the live facility and critically, with no downtime.

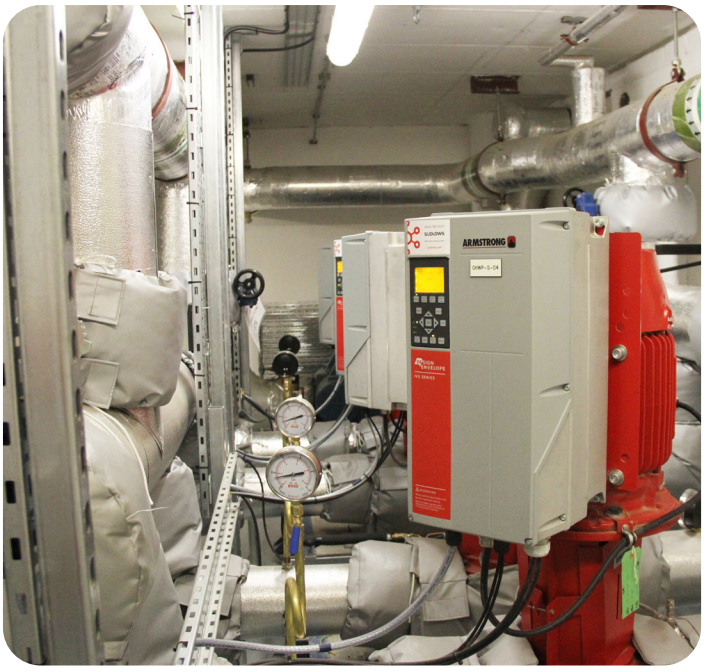


The Project

The project centred around the replacement of 4 No. existing water-cooled chillers, located internally within the building, with 2 No. new central chiller plant systems distributed between the north and south rooftop plant areas.

A total of 7 No. Mitsubishi Electric inverter scroll, modular air-cooled water chillers were to be installed and each plant area was to be provided with an acoustic enclosure providing not only a visual benefit but also ensuring that noise levels were minimised.

The system was completed through the installation of new pipework, valves, heat exchangers and pumps to enable the new systems to interface with the ones already in place and take over the existing load without interruption. The associated electrical installation works included automatic transfer switches to allow the highest level of resilience supported by an N+N A/B upstream electrical infrastructure. Finally, a new BMS system was installed to provide an enhanced level of monitoring for the new systems.

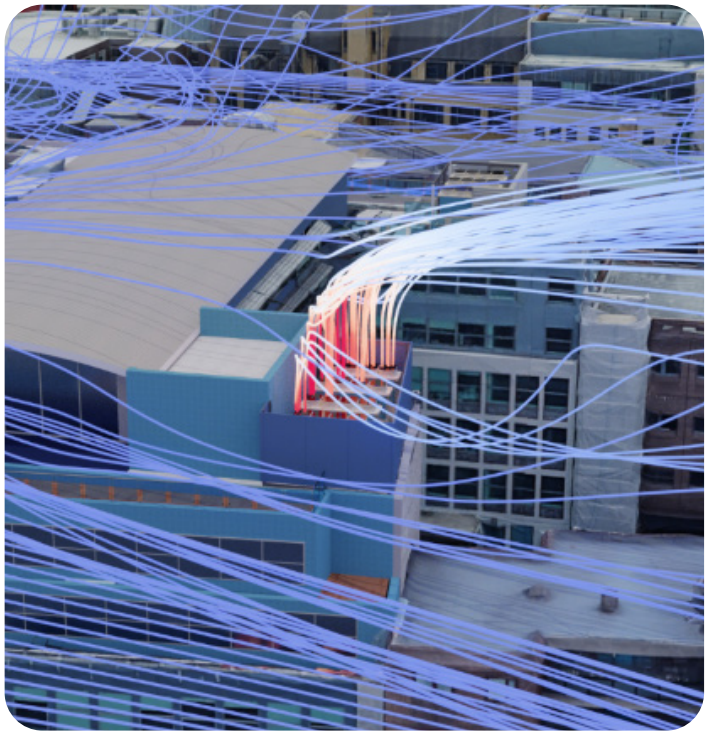


Overcoming Challenges

The project was, by it's nature, a demanding and challenging engineering exercise that demanded close management and the knowledge and proficiency of an experienced team. Examples of key challenges which were mitigated by the Sudlows Team included;

- The practical restrictions of installing roof top plant in a central London location.
- The installation of a substantial new pipework route both through a live and operational building, and externally.
- The interfacing, connection with, and transition from the existing live critical cooling system, to the new, without downtime.
- The removal of existing water-cooled chillers and plate heat exchangers from the internal plant room.

All these challenges presented a risk to the project but were carefully controlled and managed by Sudlows' experienced Management Team and through close co-ordination with the Client team, ensuring that at all times the facility remained fully operational and was not at any time placed at risk.



Conclusion

The project was delivered successfully with a substantial improvement to the facility's efficiency.

The facility now also benefits from an enhanced level of resilience and maintainability which has been possible due to the decision to not only replace the existing infrastructure with a like-for-like upgrade, but to take the opportunity to upgrade and improve wherever possible, incorporating the latest in critical engineering design approach.

Testimonial

Zac Potts, Head of Sustainability at Sudlows commented;

"This project is a great example of substantial efficiency improvements being delivered through the right choice of technology and both the Sudlows and Client team did a fantastic job of delivering such a complex project smoothly within a demanding and critical live environment."