

Case Study:

Delivering a Future-Ready Ecosystem

Scale: 100MW AI Campus

Solution: Complete end-to-end cooling infrastructure

Result: Delivered 100% on schedule

The Challenge

Delivering an adaptive cooling and system controls architecture for a 100MW AI-ready campus, designed to flex as AI demands evolve.

- Buildings A & B **30MW each**
- Building C **40MW**

The Airedale Approach

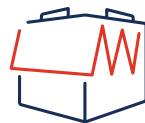
A Fully Integrated Data Center Ecosystem.

To meet demanding ready for service (RFS) and integrated system test (IST) timelines without compromising on performance, Airedale supplied a complete, pre-engineered cooling and controls ecosystem.

Every element, from chillers and air movement to controls and commissioning, was designed to operate as part of a single, coordinated platform, ensuring optimal performance, efficiency, and resilience.

By designing a synchronized system rather than integrating disparate technologies, we optimized usability, elevated environmental sustainability, and built in future-proof flexibility. The complete delivery package ensured rapid, reliable deployment to the exact technical specifications required.

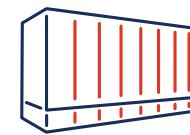
The Full Solution



Free cooling DeltaChill™
R32 aircooled chillers with
scroll compressors



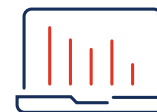
Acoustic treatments
to minimize
environmental impact



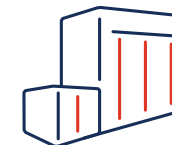
SmartCool™ ONE and
SmartCool™ Inverter
downflow units



Fan wall technology,
co-developed with the client



Software solutions
– system optimization



Air Handling Units
(AHUs)

System and Lifecycle Management

Airedale provides ongoing engineering support that encompasses every aspect of the ecosystem.

Engineered for Change: A Key Differentiator

Airedale's ability to adapt in parallel with the client's evolving design was a key differentiator.

As specifications matured, Airedale provided ongoing engineering support, delivering tailored system configurations for each building.

The result is a solution that is:

- Fully aligned with current performance requirements
- Flexible for future cooling topologies, including CDU integration
- Scalable to meet increasing AI density demands.

This is not a static system – it is an evolving cooling ecosystem.

Precision Testing, Streamlined Commissioning

Airedale ensured that system integration translated into real-world performance through a comprehensive commissioning strategy:

- Full Level 1–5 commissioning
- Factory witness testing of all elements at Airedale's Leeds, UK facility
- End-to-end validation of system performance, resilience, and efficiency.

Every interaction within the cooling ecosystem, from individual units to full-system response, was rigorously tested to meet Tier-ready standards.

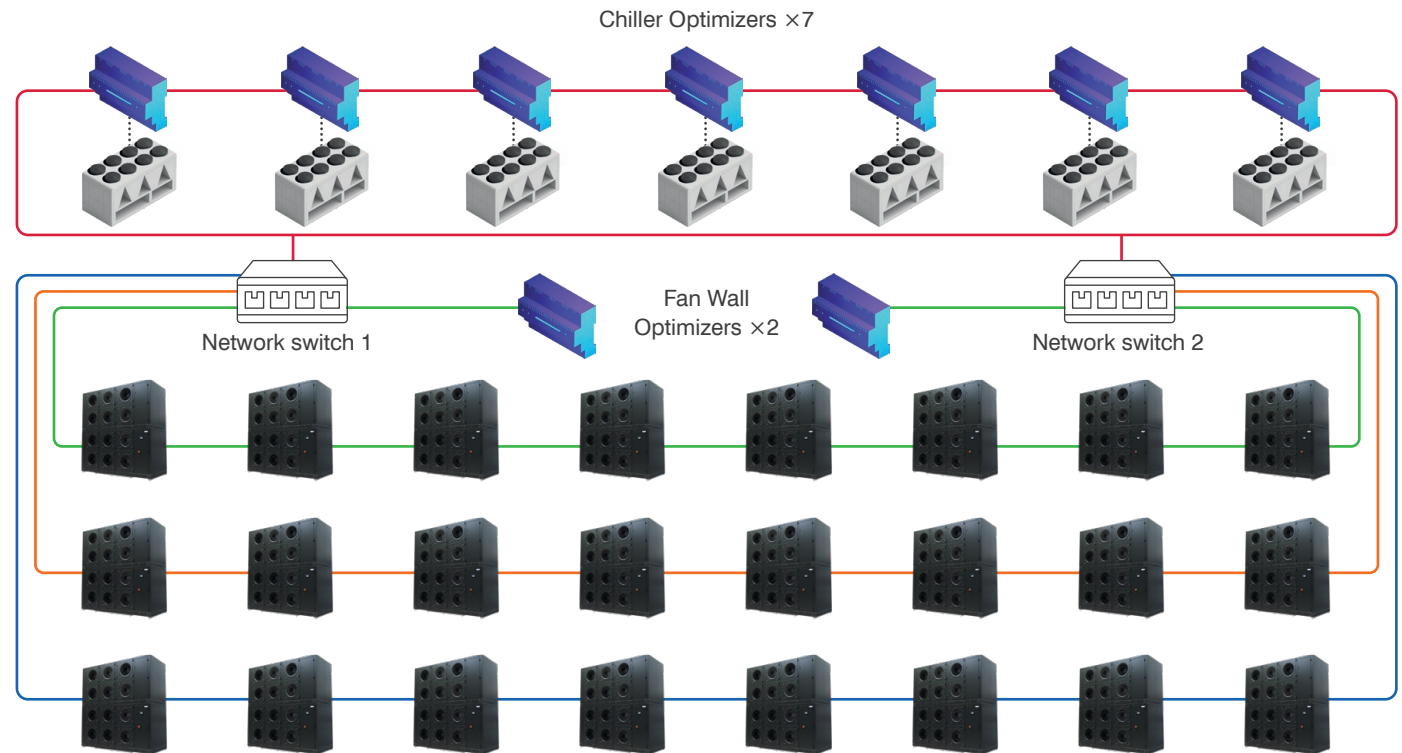
Intelligent System Control & Integration

Central to Airedale's ecosystem approach is intelligent orchestration:

- Airedale Cooling System Optimizer™ controls platform on varying numbers of chillers: capable of up to 32 chillers.
- Full integration with the site's BMS
- Continuous data-driven optimization across all connected systems.

This ensures that cooling is not only delivered, but continuously refined as operational demands change.

Cooling System Optimizer Controls Topology



Dedicated On-Site Engineering

Delivering a 100MW campus requires far more than equipment – it demands deep, multidisciplinary expertise, active on site.

Multi-disciplinary on-site team:

- Full-time Project Manager overseeing delivery
- Dedicated controls project management
- Permanent, locally based Site Manager (10–11 months per building)
- Up to 50 Airedale operatives at peak
- Independent NEBOSH/IOSH-led health & safety governance.

The result:

- Zero reportable incidents
- Consistent programme progression despite complexity
- High level of client satisfaction.

The client identified Airedale's in-house engineering depth as critical to the project's success.

Airedale is a true campus partner. Their expertise from early consultation to handover, including on-site presence, engineering flexibility and commitment to delivery gave us confidence at every stage of this major programme.

Project Director



Sustainability Built In

Sustainability is not an add-on, it is engineered into the ecosystem.



Campus-wide PUE targets under active evaluation



Lifecycle support including LCAs and EPDs



Dedicated Airedale Sustainability Engineer supporting the client



Continuous optimization using realtime operational data

Beyond delivery, Airedale continues to collaborate as an AI cooling development partner, refining system performance and efficiency across both this campus and the wider portfolio.

Airedale is a great example of a supplier that is engaged in the sustainability collaboration challenge. They are responsive to our sustainability priorities, and we take the lead from them on areas such as controls optimization to improve energy efficiency, reducing embodied carbon in cooling equipment and sustainability performance metrics relating to our products.

Senior Carbon Accounting Engineer



Why Airedale?

The client selected Airedale for its ability to deliver a fully integrated, future-ready cooling ecosystem, supported by:

- 50+ years of engineering experience with global reach
- Early-stage strategic consultancy on cooling architecture
- In-region manufacturing, reducing carbon and complexity
- Proven expertise in AI-ready cooling solutions
- Ability to custom engineer systems as designs evolve
- Seamless integration of products, controls, commissioning, and service
- Collaborative innovation, including bespoke fan wall technology.

“Airedale’s manufacturing capability and ability to engineer a customized solution made Airedale the best choice for this campus.”

Procurement Team

At Airedale, we design data center cooling and operational systems differently

Rather than treating data center infrastructure as a collection of standalone systems, we engineer dynamic, integrated ecosystems where every component, every monitoring & control strategy, and every system interaction is designed to work in harmony. The result is a smarter, more efficient, and future-ready solution that evolves alongside your operation.

With more than 50 years of engineering expertise and a global footprint, Airedale delivers fully integrated cooling solutions at scale. This philosophy underpinned the successful delivery of a complete critical cooling ecosystem for one of the UK's largest next-generation data center campuses.





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