

## Executive Summary

### Reef-UKC Network Visit to Pulsant Data Centre, Newcastle 30 January 2026

On 30 January 2026, a team of the Reef-UKC network from Aston University and the University of Oxford visited the Newcastle data centre operated by Pulsant. The visit provided a valuable opportunity to observe live data centre operations and gain practical insight into the cooling and energy challenges facing modern digital infrastructure.



During the tour, participants explored the operational environment, including server halls, cooling systems, and power infrastructure. The visit highlighted the growing pressures associated with rising energy demand and increasing rack heat density, driven by more computationally intensive workloads. These trends are placing significant demands on cooling systems, requiring solutions that are not only efficient and resilient but also sustainable.

Discussions emphasised the importance of balancing reliability with energy efficiency, improving airflow management, and preparing facilities for higher-density deployments in the future. The need for innovative cooling technologies and smarter optimisation approaches was clearly evident.

Importantly, the visit identified strong opportunities for collaboration between industry and academia. Potential areas include advanced cooling technologies, AI-enabled monitoring and optimisation, energy modelling, and the development of low-carbon solutions to support sustainable digital growth.

The Reef-UKC network extends its sincere thanks to Helen Munro and the Pulsant team for hosting such an open, insightful, and engaging visit. The experience strengthened industry–academic connections and laid the groundwork for future collaborative innovation in sustainable data centre infrastructure.