

UNIVERSITY OF LEICESTER CASE STUDY

DATA CENTRE TRANSFORMATION

The University of Leicester (UoL) is ranked 21st out of 766 universities in the world, in the Times Higher Education (THE) Impact Ranking, placing it in the top 3%. Its research is judged to be internationally excellent with wide-ranging impacts on society, health culture, and the environment. Keysource has worked with the University for over 10 years delivering a number of HPC transformational projects.

In 2021 (UoL) appointed Keysource to lead the transformation of its Computer Centre Data Centre located on campus. It followed an increase in the need for high performance computing driven in part by the growth in research initiatives such as DiRAC, ALICE and space exploration projects.

The transformation included the doubling of capacity and the adoption of a large amount of direct liquid cooling, into an existing air-cooled environment. This was a fundamental shift from a consistent approach to High Performance Cooling (HPC) with air cooled technology to a Direct Liquid Cooled (DLC) solution from HPE (Hewlett Packard Enterprise). It was the first deployment of its kind for a higher education organisation in the UK and Europe.

The solution utilises DLC technology which is direct liquid to server rather other forms of immersive cooling currently on the market. This involves incorporating the addition of the DLC directly onto the existing chilled water system and working in tandem with the air-cooled systems.

The project included:

- HPC Transformational Design Service integrating 150kW Direct Liquid Cooled (DLC).
- RIBA 0 to 7 including seamless integration of chilled water system and controls across air and DLC
- Working in partnership with the University of Leicester and Hewlett Packard Enterprise to provide an integrated and efficient solution.
- Design Guardian to ensure efficient and optimised operation after commissioning.

QUOTE

“We have an excellent working partnership with Keysource. We know that with their experience of design, delivery, and operation that we can rely on their design team to apply real life lessons learnt and deliver on our objectives, whilst critically considering the approach to installation and full life operation. Having the Keysource team onboard as Design Guardians during the commissioning and operation gives us confidence on the success of this critical research project and will deliver the University an industry leading HPC cluster for world leading research.”

Stuart Poulton, Systems Specialist at University of Leicester

“We have worked with the University for over 10 years and have gone on several HPC transformational journeys together. This latest project is an exciting first for the sector and UoL will benefit from the fact that liquid cooling is much more effective at removing heat than air cooling. It can also reduce the overall footprint, and power consumption, resulting in environmental benefits, including improved power usage, reduced emissions, better space utilisation and overall, less waste.”

Richard Clifford, Director of Solutions at Keysource