

UNIVERSITY OF Southampton



ABOUT THE COMPANY

The University of Southampton is one of the UK's top 20 research universities. Beyond its extensive curriculum of undergraduate and postgraduate courses, the University is a world leader in a significant range of disciplines. Through its innovative approach to research, the institution has produced ground-breaking findings across numerous fields from ocean exploration to understanding the internet, and from sustainable energy to finding medical solutions to major diseases. It also boasts a growing portfolio of successful spin-out companies, created as a result of these research activities.

To meet the 'day one' needs of the new data centre project, Vertiv provided the University of Southampton with three Liebert Trinergy™ UPS with a total of 1,600 kVA capacity. Provisioning for day one requirements, rather than predicted growth, wasn't a lack of foresight on the University's part; instead this enabled careful management of the initial capital expenditure thanks to the Liebert Trinergy UPS's modular nature.

The three dimensions of modularity (Vertical, Horizontal, Orthogonal) that the Liebert Trinergy UPS features allow the University to expand its power protection needs at the same pace as changing load requirements by simply adding additional power modules. Put simply, the power requirements of the new facility have been future-proofed.

www.southampton.ac.uk

Background

Supporting the University of Southampton's exceptional research and entrepreneurial performance is a committed and forward-thinking IT department - iSolutions. The iSolutions team serves over 300 individual IT services, as well as over a 4,000 staff and 1,400 student workstations. Above and beyond this core IT support, the University has created its Infrastructure Investment Programme (IIP) which allows iSolutions to take a proactive approach to investments in new technology, network architecture and its data centre.

A National Example

As the University's IT demands increase, iSolutions is working to ensure continuity of a secure, sustainable and available infrastructure. A major part of this on-going programme is the investment in a new data centre - the largest infrastructure investment ever made by the University.

The project is garnering significant interest from educational institutions across the country; its careful balance of the need for high performance and environmental accountability will stand as a blueprint for subsequent such developments. And to reinforce the prestige of the facility, Southampton has been selected by the UK Government as one of four locations to conduct a major national data analysis project.

Built on a brownfield site, the University's new data centre is symbolic of a new era of higher performance, more efficient IT. Creating the right facility, with suitable power, cooling, connectivity and redundancy, required a comprehensive understanding of the technology available within the market. Working collaboratively with the University of Southampton team, Vertiv became involved in this process at an early stage. Donning hard hats and wellington boots, some of these discussions occurred literally 'in the field.'

Reduced Environmental and Financial Footprint

"The challenge was clear: how could we enable high power computing (HPC) performance alongside more repetitive processing tasks, while maintaining maximum power control and efficiency across these varied load profiles?" Mike Powell, data centre manager at the University of Southampton, recognised the new facility posed some difficult questions for technology providers.

Vertiv was able to step in with an immediate resolution, offering an easily-deployable, enterprise-class solution which met the University of Southampton's requirements exactly: the Liebert Trinergy UPS. Southampton showed more than just an academic interest in its smart solutions to complex problems. When the iSolutions team reviewed the capabilities of the Liebert Trinergy UPS, they were impressed by its delivery of a number of 'industry-firsts:'

- The Liebert Trinergy UPS is the first UPS to combine all three industry standard functioning configurations in one high power solution: Maximum Power Control (VFI); Maximum Energy Saving (VFD); and High Efficiency and Power Conditioning (VI).
- Alongside this capability, the Liebert Trinergy UPS is the first high power UPS with an adaptive algorithm that continually monitors the power supply and load conditions, and automatically selects the most efficient operating mode. As a result, the supply to the load remains in optimum condition at all times.

This will enable iSolutions to optimise the data centre's on-going operating costs and cut several figures from electricity bills when compared to previous, less efficient and adaptive technologies.

A Greener University

Energy efficiency for the University of Southampton is, as for most public sector and enterprise organisations, a significant priority within its IT infrastructure. The University has committed to a 20% reduction in energy usage against a baseline level set in 2005/6, and so efficiency was a primary consideration within the procurement process for the facility.

Simplifying the Technology Challenge

The development of the facility demanded a wide array of technologies to operate in harmony – generators, air conditioning, UPS, lighting and the compute capabilities that would form the heart of the data centre.

"Vertiv's extensive data centre experience proved incredibly useful as we built this complex collage of efficient, high performance technologies," states Mike Powell. "We knew that we weren't just seeing a product fact sheet with a series of performance promises; the Vertiv team provided granular explanations and proof points throughout our discussions.

"Now the Liebert Trinerity UPS units that sit at the core of our new data centre ensure we have reliable, efficient power management and protection. The clever combinations of performance and serviceability mean that we're actually guaranteed 100% uptime. This, combined with the unparalleled energy efficiency, has been invaluable in meeting our objectives."

Vertiv LIFE™ Services

With the wide variety of user requirements, accentuated by the research departments' HPC requirements, it is essential that the University of Southampton's critical power protection system is maintained in an optimum state of readiness at all times.

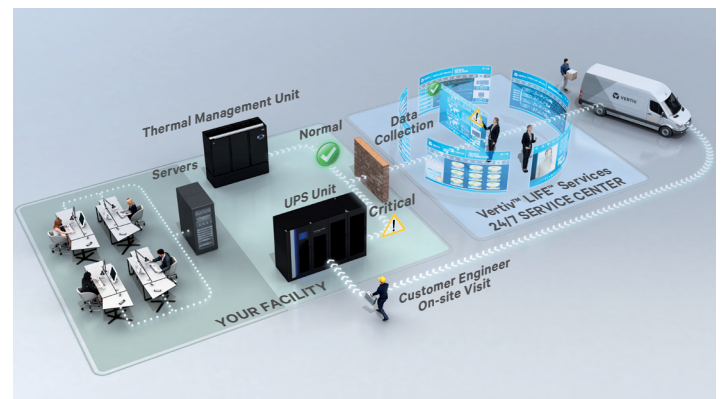
Vertiv LIFE Services enable remote diagnostics which deliver proactive equipment maintenance and reduced downtime. LIFE provides early warning of UPS and single module alarm conditions and out of tolerances, which in real terms means that the University of Southampton benefits from effective, proactive maintenance and fast incident response.

A Successful New Environment

The University of Southampton's new data centre has met, and exceeded, the key success factors that were outlined at the commencement of the project. iSolutions is proud to have delivered a high-performance facility that will enable the University to continually expand its research capabilities. Critically, the data centre also has admirable environmental and financial credibility:

- Annual CO₂ production has been reduced by 160 tonnes compared to the previous, less efficient facility
- Energy requirements have been reduced by 300 MW-hours per year, resulting in a reduced annual total cost of ownership for the facility
- The Liebert Trinerity UPS is listed on the ECA Scheme for Energy Saving Technologies. The ECA scheme allows organisations to write off the whole cost of the equipment against taxable profits in the year of purchase - reducing the capital cost of the new facility.

"We knew there were technologies out there to eclipse the performance we experienced in our existing facility. But the cost and energy savings we've made through our Liebert Trinerity systems surpassed all expectations, and consequently the entire University is benefiting from a higher performance, and a more reliable IT infrastructure." Powell concludes.



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Mike Powell, data centre manager at the University of Southampton.