



TOTAL SOLUTION DATA CENTRE DESIGN & BUILD

# NORTHAMPTON NHS DATA CENTRE

CASE STUDY

A new truly energy efficient and environmentally sound data centre for Northampton General Hospital achieving its goal of a Power Usage Efficiency of 1.15



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AS BUILT						
NB: NOTES:	CLIENT	JOB No	SCALE	CAD REF	DRAWN BY	DATE
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	Northampton General Hospital Secure I.T. Modular Room	DRAWING	PROPOSED LAYOUT Overview		DRAWING NUMBER 10224-2.01	REVISION R1



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Northampton General Hospital wanted to become more energy efficient enabling it to increase capacity and start to future proof the data centre infrastructure for the increased demands of modern computing. The project was for a 2nd data centre rather than replace the existing DC as it is in constant use.

Christina Malcolmson, Deputy Director of ICT, Northampton General Hospital explains,

*"Our IT Strategy states the vision of the Trust to move to a paperless hospital in 5 years. The further development of an Electronic Patient Record in this time will make information more accessible to clinicians, to allow for more efficient treatment of patients. We are committed to invest in easy access to good quality clinical information, but the first challenge in achieving this vision was to invest in the underpinning infrastructure, to ensure that access to all systems is quick, easy and reliable. We were very clear about our requirement for an energy efficient and flexible second data centre, both to support the Trust in its growing vision, whilst also saving money for the Trust and ultimately the NHS in these challenging times."*

Secure IT Environments was commissioned to design and build the data centre to be located externally, freeing up valuable medical space in the hospital. This was part of a programme to improve security and disaster recovering for the whole IT infrastructure. This project aimed to help deliver the NHS vision of enabling robust and resilient access, quickly and efficiently, to all patient data, whilst lowering the risk of outages.

The trust required the use of energy efficient technologies, processes and equipment that were on the ECA Energy Technology List. Northampton also specified that the DC have an overall design trailing twelve-month (TTM) Power Usage Efficiency (PUE) of 1.15 or below based on The Green Grid standard nomenclature.

Equipment included an external modular room building to secure 20 x 19" cabinets, hot aisle capture, N+1 UPS, raised access flooring, Novec Fire suppression and VESDA detection and energy efficient LED lighting. Highly energy efficient air conditioning was installed with plug fan and EC motor technology allowing the systems to ramp up and down as the cooling requirement demands.

All new power, individual intelligent cabinet power distribution units, cooling and ventilation systems include active data collection so performance can be continually monitored and is configured to meet Intermediate Level 2 requirements of the The Green Grid's Usage Reporting Guidelines for Infrastructure Metrics.

The project was completed on-budget over a fourteen week period, two weeks ahead of schedule. The data centre measures 80cm<sup>2</sup> and contains 20 cabinets. As with all public sector organisations keeping ongoing costs to a minimum is key and one of the ways that Northampton achieves this is its energy efficiency. The configuration of the cooling systems and the hardware efficiency means the site is achieving a power usage effectiveness (PUE) of 1.15 as required in the tender process.

Malcolmson concludes, *"I'm pleased to say that working with Secure IT Environments to achieve our vision felt like a true partnership and the project was delivered with many challenges, but minimum fuss over a fourteen week period. We now have a modern, flexible, sustainable data centre, with room for expansion of our clinical and business data systems which not only benefits our patients, but is the envy of IT departments across our region."*

