TOTAL SOLUTION DATA CENTRE DESIGN & BUILD

QUEEN ELIZABETH HOSPITAL DATA CENTRE

CASE STUDY

A new energy efficient data centre for Queen Elizabeth Hospital with a power usage efficiency of 1.2

Secure I.T.
Environments Ltd

The data centre at Queen Elizabeth Hospital was reaching capacity with an ageing infrastructure that was not as energy efficient as it could be.
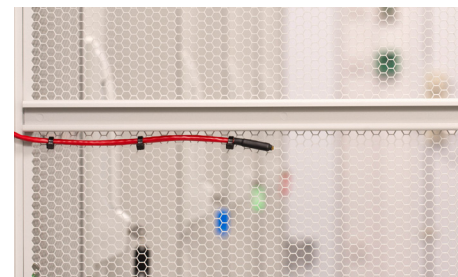

The Queen Elizabeth Hospital is an established 488 bed general hospital, which together with 12 cots in a recently refurbished Neonatal Intensive Care Unit provides healthcare services to West and North Norfolk in addition to parts of Breckland, Cambridgeshire and South Lincolnshire. Following a tender process Secure I.T. was awarded the contract to design and build a new primary 'energy efficient' external modular data centre within the grounds of the Queen Elizabeth Hospital.

The new data centre was designed to house the authorities core network switches, servers and storage along with the local passive LAN cabling which would leave room for future expansion and capacity. Mike West at Queen Elizabeth Hospital NHS Trust said:

"We needed a new data centre to be an essential part of improving and expanding the services we offer the hospital's community."

Hospitals can be complicated spaces to build any new data centre, but because an external modular data centre design had been chosen, a green belt piece of land was allocated for the project, that Secure I.T. could have total control over. All design drawings were submitted for planning permission and building regulations by Secure I.T. Environment and once granted it was possible for the team to fully manage and secure the space in which construction was to take place, ensuring both a smooth project and public safety.

As with all hospitals space was at a premium and therefore it was decided to build the data centre externally with a covered walkway back to the main hospital. Working closely with the trust Secure I.T. was able to design a walkway that was not just functional but aesthetically appropriate for the building.

The final **modular data centre** design incorporated 20 cabinets, full power supply infrastructure including generator hook up, hot aisle capture configuration for energy efficiency, Novec Fire suppression and Wagner early particle detection to ensure safety as well as energy efficient air conditioning and UPS systems in an N+1 format and all 19" cabinets included intelligent power distribution.

In addition, the hospital secured a maintenance programme with Secure I.T. Environments, to ensure that their infrastructure remains fully operational and up to date.

The new 80 sqm data centre was completed in fourteen weeks and supports the hospital in the delivery of essential services to support patient care, and services provided throughout the Trust. In line with the Trust's commitment to energy efficiency the data centre has been designed to deliver the best possible Power Usage Effectiveness (PUE) ratio, lowering running costs for the Trust and its overall environmental impact. The new data centre achieves its goal, with an impressive PUE of 1.2

At the start of the project Queen Elizabeth Hospital decided to omit the structured cabling element of the works, but due to the success, dedication and excellent workmanship of the installation, Secure I.T. was subsequently also awarded this final element of work.

Chris Wellfair, projects director at Secure I.T. Environments added:

"This was a fantastic project to be involved in working with the Queen Elizabeth NHS Trust to deliver a critical part of its IT infrastructure, based on our experience of working with 15 other NHS Trusts in recent years."