2bm

Health and Medical Research

The Dudley Group **NHS**
NHS Foundation Trust

TeraFirma

Russells Hall Hospital
Dudley

2bm refurbish legacy datacentre in middle of busy working hospital, with no downtime

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The finished product is very impressive and an environment the team can be proud of – more importantly it is reliable and a room the Trust can depend on as a solid foundation to our IT infrastructure.

We are now proud to show visitors around our datacentre, using Sensorium DCIM amongst other state-of-the-art features as a showpiece.

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Peter Lowe
IT Programme Director,
The Dudley Group NHS
Foundation Trust

WORKING WITHIN A BUSY HOSPITAL WITH ZERO OPTION FOR DOWNTIME

The client

Located in the heart of the Black Country, The Dudley Group NHS Foundation Trust is the main provider of hospital and adult community services to the populations of Dudley.

Currently, the Trust serves a population of around 450,000 people across three hospital sites: two outpatient centres and Russells Hall Hospital. The hospitals are amongst some of the most technologically advanced in the country, where state-of-the-art equipment and modern, purpose-built buildings combine to create the highest standards of patient care.

enabled, efficient, ready.

Executive summary

Despite having undergone modernisation only 12 years ago, elements of the existing data centre at Russells Hall Hospital were up to 15 years old, and therefore required refurbishment to cope with increased demand.

Having successfully designed and built the neighbouring FMC site, also owned by the same Trust, 2bm were approached to address the issues of a legacy facility located at the centre of a busy, working hospital within a 14-week timescale.

The requirement

In order for the hospital to support the Government initiative to ensure all patients' health records are electronic and thus paperless by 2020, it would need dependable infrastructure in place to support the transition. Due to problems with antiquated equipment and bad power, the existing legacy datacentre required improved reliability to reduce the growing risk of outages.

The Trust also had a vision to create 'one datacentre across two sites', the facility needed to be built to an enterprise-class standard with increased efficiency and capable of being showcased to potential TeraFirma clients.

The challenge

Due to the uniqueness of the project and the fact that the datacentre is located in a live hospital environment, it was paramount that there could be no risk of downtime and all systems remained live throughout the project.

The hospital corridors were invariably busy with patients, staff and the moving of beds, equipment and catering apparatus. Lack of space led to restrictions on the movement of large and valuable items of datacentre kit. To overcome this accessibility issue the project work had to be done around the clock.

Stuart Robinson, 2bm Project Manager, commented: "Working flexible hours was essential to ensure we could manage deliveries and the various shut downs, including relocating the existing batteries to the new UPS."

The solution

2bm's proposal, based on providing a fault resilient datacentre with increased energy efficiency, required a full-time project manager, for an upgrade of works which included:

› Decommission of all legacy UPS, power equipment and network cabling;

› Installation of server and network racks into a hot and cold aisle arrangement;

› N+1 UPS protection to the IT Load;

› New concurrently maintainable LV distribution;

› Future expansion by up to 50%;

› Full Airflow management with cold aisle containment, rack blanking panels and floor grommets;

› Phased migration of Live IT equipment;

› New structure cabling;

› Double knock fire detection and suppression with zero ozone depleting gas;

› Early Warning Highly sensitive smoke detection (VESDA system);

› Dual fully monitored in-rack PDUs;

› Floor tile and grille relocations and replacements;

› Environmental monitoring with remote alerting via iMeter: Temperature and humidity sensors, water leak detection and equipment fault detection;

› Sensorium DCIM, providing full equipment, power and environmental monitoring for the TeraFirma IT Estate;

› LED lighting and emergency lighting with proximity sensors;

› Cooling equipment upgrades with efficient fan replacement;

› Full specialist datacentre clean;

› Simulated it load IST testing and commissioning;

› Facility training and O&M manuals handover;

› Ongoing preventative datacentre maintenance plan for whole TeraFirma IT estate.

architects of data centre change   **2bm**.co.uk