

Secure I.T. Environments Completes Challenging Royal Free Hospital Data Centre Upgrade in Just Nine Weeks

Relocation and replacement of cooling infrastructure on mission critical live data centre.

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[Environments Ltd](#) (SITE), one of the UK's leading design and build

companies for modular, containerised and micro data centres, has completed an Air Conditioning upgrade project on

the main mission critical data centre at [Royal Free Hospital](#), part of the [Royal Free London NHS Foundation Trust](#). The project was commissioned to replace "End of Life" cooling infrastructure and improve the energy efficiency of the data centre.

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*Chris Wellfair, projects
director at Secure I.T.
Environments*

Originally built in 2010 by Secure I.T. Environments, the data centre serves Royal Free Hospital's thousands of patients receiving acute and specialist services, including hundreds of transplant patients, and well as supporting the training of hundreds of medical students every year.

Cutting PUE to 1.15 or less

The existing cooling infrastructure was removed and replaced with four GEA 18D Multi-DENCO down flow close control direct expansion air handling systems and four DENCO ambient air-cooled condensers. The new

installation now achieves PUE values of 1.15 or less. This solution achieves a sensible heat ratio (SHR) of 1.0, meaning that air is cooled without dehumidifying it. This combined optimised use of the inverter compressor, electronic expansion valve (EEV) and fans as part of the climate control system, reduces energy costs, improves energy efficiency, and extends the life of the humidifier cylinder.



Company logo for Secure I.T. Environments

A demanding live installation
Any live environment installation needs to be carefully managed, but none more so than a hospital critical data centre. The changing cooling requirements of the data centre meant that the relocation of the external condensing units needed to be housed in a completely different location, this required considerable effort to ensure compliance with building and planning regulations, including acoustic surveys and aesthetic considerations.

Condensers are now located outside on a balcony away from existing services, requiring the installation and weatherproofing of new pipework, and ensuring it would be accessible and safe for on-going maintenance.

Commenting on the project, Chris Wellfair, projects director at Secure I.T. Environments, said: "At all times we had to consider that this was a fully operational hospital, with a tight project window to ensure completion before summer temperatures hit. We installed temporary cooling to ensure concurrent maintainability of existing services at all times, as well as carefully managing all logistics through multi-departmental planning at the Trust across Properties, Estates and I.T."

As a result of the success of this project, which was completed in just nine weeks, further works have been awarded to Secure I.T. Environments to implement cold aisle containment in the same data centre, and provide UPS and AC upgrades at another.

Secure I.T. Environments provides ongoing maintenance support for five rooms at the Royal Free NHS Foundation Trust.



Image of Royal Free Hospital data centre



Chris Wellfair, Projects Director

About Secure I.T. Environments Ltd

Secure I.T. Environments Ltd is a UK company specialising in the design and build of energy efficient internal/external secure modular, containerised, and micro data centres, including mechanical and electrical infrastructure. The company has established an enviable relationship with its clients based on trust and mutual respect by working as a team with the client and its project team.

The company offers a “Total Solutions Package” to the private, healthcare, education, and government sectors, as well as co-hosting companies in the UK and offshore, by way of design, implementation, and installation management services for projects from small stand-alone computer rooms to large public sector contracts and co-hosting locations. All rooms are designed to meet the latest test standards, now regarded as the benchmark standard for modular rooms being installed throughout the UK and Europe.

Secure I.T. Environments’ primary aim is to ensure that clients’ critical infrastructure components are protected against all external threats in a suitably protected modular room or ModCel containerised environment. To this end the company has established long-standing partnerships with its manufacturers, who are at the forefront of R&D, to ensure the highest level of physical protection and energy efficiency is maintained.

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