

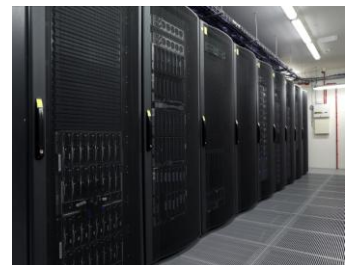
Client: Illumina

Location: Cambridgeshire

Sector: Pharmaceutical

Project value: £1,000,000

Project: Project Meridian



## Brief

Illumina is a global company that develops innovative solutions for DNA, RNA and protein analysis. As part of this, they develop and manufacture integrated systems for the large scale analysis of genetic variation and function.

We were asked by Illumina to provide a new IT cooling system, in order to improve the energy and all round efficiency of their business. As a successful global company, they place a high value on the rapid delivery of solutions and cutting edge technology and as such, their main requirements were that the cooling system be energy efficient, cost effective and low maintenance.

It was also necessary for the system to meet the following technical requirements in order to fulfil their business needs:

- 28 rack positions
- 12kw average load density per rack position
- Maximum of 20kw in any single rack position
- No fixed location of high density cabinets at design stage
- Mixture of 19" rack based hardware and free standing open post equipment
- 15 minute controlled shutdown buffer in event of mains and generator power failure

## Action

Illumina's mission is to be the leading provider of integrated solutions that advance the understanding of genetics and health and JCA were happy to help them work towards this by maximising their efficiency and introducing the Echo High Efficiency IT Cooling System.

The system has been designed and developed by JCA and Airedale and was deployed within Illumina's genome analyser IT infrastructure. The works included the supply, installation, commissioning and testing of the first Echo High Efficiency IT Cooling System to be installed worldwide.

By taking into account airflow, temperature and pressure and matching the server parameters, Echo is accurate; it delivers the exact cooling required, meaning that energy is saved, along with associated costs. The elevated water temperatures allow for partial free-cooling for 95% of the year and full free-cooling for 50% (based on average climate conditions in London, UK).

## Outcome

By providing Illumina with the Echo High Efficiency IT Cooling System, they now have an energy efficient cooling solution, which is cost effective and meets all of their technical requirements.

The system is able to offer full free cooling up to 13°C ambient which provides an annualised PUE (power usage effectiveness) of between 1.22 and 1.28. Over a 10 year period, for a 1 MW data centre design, with N+2 cooling system (assuming a 5% increase in energy cost of 8p/kWh), savings would be approximately £3,000,000 when compared with a standard DX or chilled water system and £1,500,000 when compared with a standard free-cooling application.

The project carried out for Illumina was a great success. It has helped to confirm the far reaching benefits of the Echo High Efficiency IT Cooling System and we are proud that the project was delivered to the continually high standard that sets JCA apart.

