

Chesterfield Royal Hospital



CUSTOMER

Chesterfield Royal Hospital

SECTOR

Healthcare

FOCUS

Design and installation of building control technology

KEY SUCCESSES

- Significant cost savings achieved
- NHS 5% energy savings target met
- Patient comfort and healthy air quality prioritised
- Continued energy savings ensured through staff training

Project overview

Chesterfield Royal Hospital has benefited from services supplied by BG Energy Solutions to help meet demanding annual cost improvement targets and energy reduction objectives of 5% set by the NHS Foundation Trust.

Background

Serving a catchment population in north Derbyshire of around 375,000, Chesterfield Royal Hospital (CRH) provides a full range of acute services plus 24-hour accident and emergency care and specialist services for children.

Built in 1984, CRH originally featured Andover MP2000 building management system (BMS) technology. However, with the rapid advance of BMS development in the 1990s, the hospital took a stance to embrace an upgrade programme.

“We regularly assess our capital investment and plan BMS-related projects as and when we can afford them, whether they are upgrading existing facilities or refurbishing new ones,” explains Stephen Bacon, Energy Manager at CRH. “Over the past 15-20 years we’ve been through four tender processes for design and installation projects, all of which have been won by BG Energy Solutions.”



BMS SERVICES HELP EXPANDING HOSPITAL HIT ANNUAL 5% ENERGY-SAVING TARGET



The challenge

Most recently, the hospital sought to bring its BMS technology up to date, in order to reap further energy savings. The aim was the gradual introduction of Delta BMS technology, in order to control and/or monitor essential functions such as heating, ventilation and domestic hot water across the entire site. Where the Andover BMS technology has yet to be replaced, it at least shares data with Delta as necessary.

However, this proved to be a complex project, since CRH was keen to avoid the constraints of a single manufacturer with a tied product range and associated maintenance headaches.

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Energy Manager, Chesterfield Royal Hospital

The solution

By using Delta Controls and their open integration Bacnet technologies, this enables the hospital to communicate freely with at least seven other manufacturers of Bacnet products on the hospital network, with these all communicating and sharing data as required. BG Energy Solutions was able to provide the best product for each application. This, in turn, means that Chesterfield Royal Hospital does not have the constraints of a single manufacturer and benefits from the cost savings accordingly.

BG has also worked with the hospital in other areas, in order to boost its energy efficiency. For instance, eight operating theatres were retrofitted with inverters to control fan speed. This allows the monitoring of air-flows to help harness any potential for air transmitted infection, even though CRH has one of the lowest hospital-acquired infection rates in the country.

Another recent project has seen CRH take its first steps into lighting control. Lighting control panels were designed by CRH and built by BG Energy's panel shop. Nine panels have now been completed to control lighting in the hospital's plant rooms.

However, arguably the most notable recent project took place in 2009-10, when the trust opened three new wards, Hasland, Elmton and Ridgeway (as a single, three-storey building), at a cost of £12 million. Again, BG implemented Delta controls to oversee heating, ventilation and hot water, along with a small solar DHWS heating system.

Key to all of the projects has been the installation of simple user interfaces that give individual control to staff across the site.

“The easy-to-use panels really help because it's a challenge to reduce energy consumption year-on-year when the hospital is constantly

expanding and upgrading,” says Stephen Bacon, Energy Manager at CRH. “We are set a target 5% reduction figure by the Trust, so implementing the Delta BMS technology has obviously helped as facilities such as boilers are only operational when demand is required and heating systems can be turned down or off when areas are not occupied.”

Results and outcome

The close monitoring of energy consumption at CRH helps to indicate what areas of the hospital are commanding more energy use. This in turn targets efforts and thus makes a big difference in achieving the hospital's targeted 5% reduction.

“The close relationship between BG and our estates management team helps get to the heart of any poor plant performance issues and energy wastage,” adds Mr Bacon. “The team at BG has been excellent, from design through to installation, and training. In fact, BG helped train our staff, mostly at no cost, so we can understand where to focus our projects. In the past the emphasis was BMS, but now it is more BEMS – building energy management systems.”

And the projects at CRH keep on coming. The next initiative is to upgrade all 12 operating theatres at CRH, which will include new air handling units and panels to control temperature and humidity. The quote from BG Energy Solutions has been submitted with contract decisions pending.

“CRH is committed to reducing its impact on the environment and becoming more energy efficient,” concludes Mr Bacon. “BG continues to help us target significant savings through the installation of the latest BMS equipment that meets the requirements of both patients and staff.”