VITAL ENERGi

CASE STUDY

Leicester Royal Infirmary & Glennfield Hospital

CHP INSTALLATION

OVERVIEW

While Vital Energi have the ability to perform full design, build, operation and maintenance packages, we are also able to contribute a specific, limited part of an energy solution and fit seamlessly into delivery of a project and through combining our core values of outstanding strong service and technical excellence with an outstanding supply chain, we helped to deliver installations at Leicester Royal Infirmary and Glenfield Hospitals to the most exacting time scales.

Leicester Hospitals had already decided on the size of the engines they wanted and needed a contractor to source and install them, ensuring optimum compliance with the existing infrastructure.

CHALLENGE

The Trust was aware of the benefits of Combined Heat and Power, having installed two CHP engines at its Glenfield site in the early 1990s but these installations had come to the end of their lifecycle and needed to be replaced. In the case of Leicester, Vital would be replacing three small CHP engines with one larger, much more efficient engine.

Glenfield and the Royal Infirmary were a significant investment for the Trust and, as such, were expected to deliver both large carbon and financial savings quickly. A third strategic aim detailed by the Trust's board was that the system would bring more resilience to the electrical and heating system.

The £2.27 million system, which was part funded by the Department of Health, would also have to be delivered to a very tight deadline, something which Vital Energi were uniquely placed to do, due to their high levels of in house expertise and extensive supply chain.

PROJECT SUMMARY:

CLIENT
Interserve

PROJECT
CHP

TIMESCALE:
30 weeks

CONTRACT VALUE:
£2.8 million

THE BENEFITS:

- Accelerated procurement of CHP Engines
- Reduced CO2 emissions
- Low NO2 emissions to meet Air Quality Management Area standards
- Refurbishment, where appropriate, of existing equipment

‘ Due to our extensive supply chain and in house expertise Vital Energi were able to meet the challenging procurement and installation deadlines and ensure that the project was delivered to schedule and on budget. ’

MIKE COOKE, REGIONAL DIRECTOR - VITAL ENERGI

THE SOLUTION

The biggest initial hurdle to the project was sourcing CHP engines which met the specifications of the Trust. With a normal order taking up to 6 months to fulfil, Vital Energi would have just 5 weeks to source and arrange delivery. This was a challenge Vital Energi were uniquely placed to meet due to our extensive supply chain and both engines were sourced to the specifications of the Trust and delivered on time, allowing the accelerated programme to continue.

Vital installed a 1.6MWe plant at a cost of £1,2million at Leicester Royal Infirmary, which consultants estimated would deliver savings of up to £389,145 per annum, while reducing carbon dioxide emissions by 2,701 tonnes per year.

At Glenfield Hospital, Vital Energi installed a 770kWe plant at a cost of almost £1million which consultants estimate will deliver up to £200,745 per annum while reducing carbon dioxide emissions by 1,474 tonnes per year.

Vital Energi always have an emphasis on value added engineering and, where possible, will refurbish and reuse the existing assets on site to save our clients’ money. In this instance we extensively refurbished the hospital’s transformer, negating the need to buy a new, expensive piece of equipment and saving them a considerable amount of capital investment. This value added engineering is a core value which also saw our team assess the existing infrastructure and, because of our experience and knowledge of the CHP engines we installed we were able to recommend improvements for the integration of the engines into the existing infrastructure, explaining these to the hospital’s energy team who could make the improvements, making the system even more efficient.

One thing all hospitals are committed to is a healthy environment and it was clear that the Trust had an interest in ensuring emissions from the system were as low as possible and had the minimum impact on air quality. Leicester Royal Infirmary was also situated in an Air Quality Management Area so our experience of complying with essential legislation was useful in halving the NoX emissions on the project.

A big concern when installing energy schemes in hospitals is that to connect them and make them live, they invariably involve shutdowns. Vital Energi is experienced at this type of project and ensure that these shutdowns are meticulously managed and have a low impact. Our high levels of communication ensure that we work alongside hospital staff to plan these events, and our high levels of in-house expertise ensure that we have flexible staffing, so if work needs to be undertaken at midnight, it is simple to arrange and execute.

Similarly, we can arrange for the delivery of large pieces of plant and equipment outside of an organisation’s busy hours, reducing disruption to issues like access.

THE CONCLUSION:

The Trusts board set out three clear strategic ambitions which it wanted these installations to address:

> Lower CO2emissions

> Reduce Energy Spend

> Increase the resilience of the electrical and heating infrastructure

The project achieved all of these ambitions,

DELIVERING OVER

4000

tonnes of CO2 per annum and savings of almost £600,000 per year. These installations will now continue to deliver these benefits for years to come, ensuring a more resilient and reliable energy solution.