



OVERVIEW

We have over a decade of experience in contributing to the King's Cross development's infrastructure. As the site has evolved, we have created numerous solutions including the district heating and cooling networks, temporary and permanent energy centres and the ground-breaking cooling solution. The primary assets under our responsibility now include:

- The TI energy centre – A combination of combined heat & power engines, boilers and thermal stores which produce heat and power for the development.
- The King's Cross Heating Network – The main spine, branches and building

CHALLENGE

At King's Cross we have a team of three engineers and a contract manager who oversee all works. We have an engineering presence on-site from Monday-Friday and on-call engineers to respond to issues over the weekend and out of core hours within a timescale agreed with the client. This team deliver all scheduled, preventative maintenance as well as reactive maintenance whilst ensuring legislative compliance.

Additionally, as part of the O&M contract we provide comprehensive reporting to the

connections throughout the site.

- The King's Cross Cooling Pod – This will produce chilled water for cooling 14 sections of the development and houses a combination of air, water and absorption chiller cooling as well as thermal stores and associated plant.

- The King's Cross Cooling Network – The main spine, branches and building entries for the connected premises.

Our operations and maintenance contracts essentially see us responsible for the entire heating and cooling for the development.

client so that they have a detailed overview of how the energy solution is performing. **Efficient Planned Maintenance through Integrated Software Programme**

We utilise the latest asset management software to implement a comprehensive maintenance plan which is designed to allow the energy scheme to perform optimally, whilst extending the design life of the plant. Every individual asset which makes up the King's Cross scheme has been catalogued in the system, along with essential information such

PROJECT SUMMARY:



CLIENT

Metropolitan King's Cross Limited

PROJECT

Operation & Maintenance

TIMESCALE:

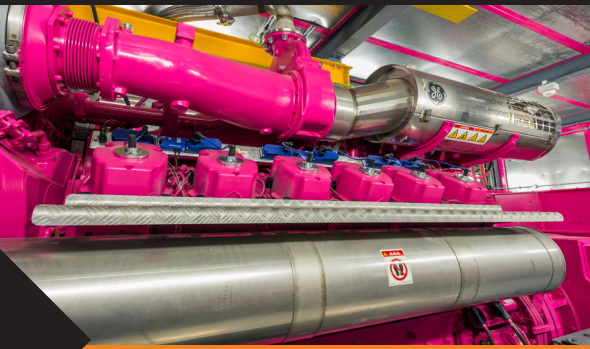
2012-2037 (25 Years)

CONTRACT VALUE:

£15 Million

THE BENEFITS:

- > Cost effective combination of on-site expertise and reactive cover
- > Reduced downtime due to a combination of planned and reactive maintenance
- > Full legislative compliance
- > Fully informed client, briefed regularly with reports.



In addition to the large pieces of equipment, such as boilers, chillers, CHP and cooling towers, our team also have responsibility for maintaining in-premises equipment, such as the plate heat exchangers or in-home/in-business Heat Interface Units which act as a link between the primary and secondary circuits.

as manufacturer's guidelines and warranties, and a detailed asset management plan is compiled for each item.

This intelligent system enables "engineer optimisation" by combining the jobs into as few visits as possible, which reduces the costs to our clients. The system also ensures our engineers have adequate supplies of consumables and replacement components, allowing them to carry out their duties without delay.

As the engineers undertake these works, the system creates verifiable audit trails of works completed, which can include detailed records, which may be needed for statutory compliance.

Minimising downtime through intelligent monitoring systems

Our monitoring systems are successful in identifying potential issues which we can remedy before they result in down time, but we also have in place in-depth plans and procedures for any system failures which need reactive maintenance.

As part of our contract, we agree engineer response times with the client and these are adhered to 365 days per week. The system can be monitored remotely and should a problem be detected, it automatically sends a notification to the on-duty engineer who can take action.

One part of reducing downtime is to identify areas which are, traditionally more likely to fail and monitoring them closely. By having a stock of backups for

items, such as transformers we can make repairs in the timeliest fashion and the combination of planned maintenance, and rapid reactive maintenance ensure the minimum downtime and optimal performance.

Remotely Monitoring District Heating & Cooling Network

If properly installed, a buried district heating network can achieve design life in excess of 50 years and leaks are extremely rare, but to achieve this, they must be properly monitored. We use state of the art, real-time alarm system to monitor district heating and cooling pipework.

These systems can automatically alert an engineer to the problem. This is important as issues with district heating networks can become more serious over time and, if left, a simple repair can continue to deteriorate until it becomes a serious and costly problem.

Delivering Data & Reports

Vital provide a variety of pre-agreed reports to the client which range from daily summaries emailed through each morning to more in-depth monthly reports which cover agreed KPIs, ensuring the client gets the information they need.

Each client is different and their data requirements are unique and we will work with them to create reports which satisfy their needs. For King's Cross these include health and safety incidents, critical plant alarm warnings and/or any consumer complaint. We also deliver detailed information on energy usage

and production including:

- gas and electricity consumption in the Energy Centre
- thermal output from gas boiler plant
- run hours of all installed plant
- thermal output from CHP engines
- electrical output from CHP engines
- efficiency of Energy Centre plant
- CHPQA calculation
- maintenance works undertaken

Ensuring Legislative & Health & Safety Compliance

Every energy centre has a range of legislation which it must comply with and we often take responsibility for this as part of our contract. These duties range from routine boiler maintenance through to hosting regular fire inspections from the local fire brigade.

We work with clients to ensure clear areas of responsibility and this often results in undertaking specialist duties. In the case of the Cooling Pod we must prepare and oversee inspections for Legionella which is necessary for all evaporative cooling installations. Similarly, it is essential that areas such as water discharge, which oversees the discharge of chemicals is fully adhered to.

Many of these duties require an in-depth knowledge of legislation which can stretch into hundreds of pages of documentation. Our specialists are able to absorb this responsibility into the Operations and Maintenance contracts, giving our clients peace of mind that their projects are fully legislatively compliant.