

WB Power Services (WBPS) was first established in 1983 and since then we have grown significantly in size and service capability. Today, we provide critical power services to some of the UK's most important businesses and organisations, ensuring essential services are protected. We are proud to retain our family values on a national scale as we strive to be the biggest and the best power generation company in the UK.

CASE STUDY



NORTHAMPTON GENERAL HOSPITAL

Northampton General Hospital NHS Trust provides general acute services for a population of 380,000 to people living throughout whole of Northamptonshire, a population of 684,000. The Trust also provides other services to a wider population of 880,000 who live in Northamptonshire and parts of Buckinghamshire.

WB Power Services were awarded the opportunity by the Foundation Trust to specify, design and install a standby power solution for the hospital, providing vital back-up power for the facility in case of a power failure.

PROJECT OVERVIEW

11MVA+

GENERATOR INSTALLATION
6x prime rated generating sets installed on-site, totalling 11.2MVA

200,000 LITRES

FUEL MANAGEMENT SOLUTION
Ove 200,000 litres of fuel provided via newly installed fuel solutions



EQUIPMENT REMOVAL & REFURB
Responsible for the removal, transportation and refurbishment of existing generator sets



PLANT ROOM INSTALLATION
The generating sets were installed in existing plant rooms with significant space restrictions

OTHER REQUIREMENTS

SOUND RESTRICTIONS

CONTROL SYSTEMS

ELECTRICAL INSTALLATION WORKS

PROJECT OVERVIEW

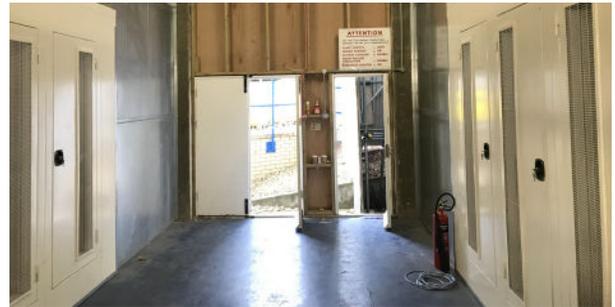
An incredibly diverse and bespoke project for the WB Power team, the installed solution comprised of incumbent equipment removal, civil works and the installation of 6 x Kohler-SDMO, prime rated generating sets in existing plant rooms. The generating set was installed along with accompanying ancillary equipment such as fuel tanks, plant room attenuation equipment, exhaust flues, switchgear and electrical installation/migration works.

GENERATORS 1, 2 & 3

EQUIPMENT REMOVAL & CIVIL WORKS

Phase one of the project was the supply, installation and commissioning of 3 x Kohler-SDMO T2500 2273kVA Mitsubishi prime rated generating sets complete with set to set & mains synchronising COMAP control panels, situated in an existing plant room. Prior to their installation, the existing generators and accompanying ancillary equipment was to be removed. Works included:

- STRIP DOWN INTERNAL CANOPIES OF EXISTING GENERATOR SETS
- CIVIL WORKS ON EXTERNAL 'LANDING AREA'
- DISMANTLING OF EXISTING EXHAUST FLUES
- DRAIN DOWN & CUT UP 2X 20,000L FUEL TANKS
- REMOVAL OF EXTERNAL EXHAUSTS



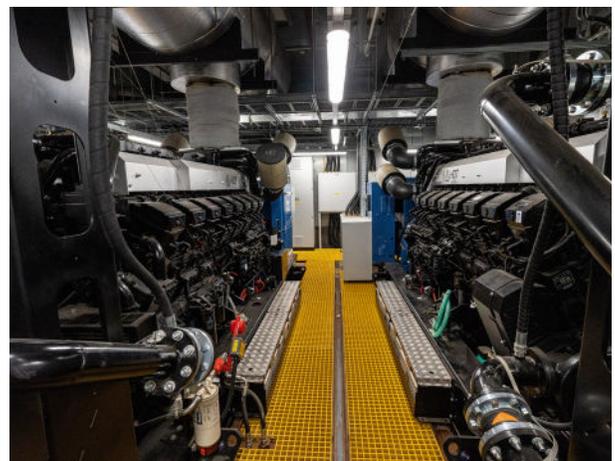
Incumbent generating sets and ancillary equipment demonstrated significant wear and tear and was no longer offering a reliable back-up power solution for the hospital.

GENERATORS 1, 2 & 3

GENERATORS & ANCILLARY EQUIPMENT INSTALLATION

Once all existing generators and ancillary equipment had been removed, modifications were made to the existing layout of the plant room to allow for the installation of an additional generator, in addition to the existing two. Following this, installed equipment included:

- ACOUSTIC PLANTROOM EQUIPMENT (75DBA @ 1M)
- 3X KOHLER-SDMO T2500 2273KVA MITSUBISHI GENERATORS WITH ACCOMPANYING BUNDED SLAB FUEL TANKS
- BESPOKE PIPEWORK AND FLUE SYSTEMS
- REMOTE RADIATORS, SITUATED ON THE ROOF



The three 2500kVA generators were installed with set to set & mains synchronising control panels

FLUE AND RADIATOR SYSTEMS

Due to the healthcare environment, there were strict sound levels that the newly installed generating sets had to achieve. To accomplish this, WB Power proposed the supply and installation of exhaust gas silencers, which would achieve a sound level of 75 dBA @ 1m. The flues were to be extended to roof level, and were to follow the existing flue route.



The newly installed pipework and flue system, which was designed and installed by WB Power Services



The three remote radiators in place upon the roof of the hospital, built within a bespoke steel grantry and walkway system

GENERATOR REFURBISHMENT

Phase two of the project was the removal of two existing Perkins generator sets. Following their removal from the existing plant room, the generators were transported back to our Ilkeston testing facility to be refurbished. Works included:

- **ALTERNATOR REPLACEMENT ON GENERATOR ONE, UTILISING OEM SPARE PARTS**
- **RE-INSTALLATION OF GENERATORS IN NEW ACOUSTIC HOUSING**
- **FULL SERVICE, LOAD TESTING AND PROVING**
- **CIVIL WORKS INCLUDING CONCRETE BASE AND COMPOUND CONSTRUCTION**
- **NEW 200 HOUR, BASE TANKS INSTALLED WITH TRANSFER SYSTEM**



As part of the installation, the incumbent generators were removed, refurbished and re-installed by WB Power Services

GENERATORS 4, 5 & 6

EQUIPMENT REMOVAL & CIVIL WORKS

Phase three of the project was the supply, installation and commissioning of 3 x Kohler-SDMO T1250 1000kVA Mitsubishi prime rated generating sets, complete with set to set & mains COMAP synchronising control panels, to be installed within an existing plant room. Prior to their installation, the existing generators and accompanying ancillary equipment was to be removed. Works included:

- DRAIN DOWN EXISTING BULK TANK AND DISPOSE OF FUEL TANKS
- ISOLATE AND REMOVE EXISTING GENERATORS & SWITCHBOARDS
- REMOVE GENSETS, EXHAUSTS, OUTLET ATTENUATORS, SWB AND FUEL TANK FROM SITE
- COMPLETE REQUIRED CIVIL WORKS, EXTENDING OUTLETS OUTSIDE THE ROOM



The newly installed outlet attenuators for generators 4, 5 and 6.



Existing switchgear located in the plant room prior to its removal. WB Power Services isolated and removed all equipment utilising their own Hiab fleet.

GENERATORS 4, 5 & 6

GENERATORS & ANCILLARY EQUIPMENT INSTALLATION

Once all existing generators and ancillary equipment had been removed, modifications were made to the existing layout of the plant room to allow for the installation of an additional generator, in addition to the existing two. Following this, installed equipment included:

- ACOUSTIC PLANT ROOM EQUIPMENT (75DBA @ 1M)
- 3X KOHLER-SDMO T1250 1000KVA PRIME RATED MITSUBISHI GENERATORS WITH ACCOMPANYING BUNDED SLAB FUEL TANKS
- BESPOKE PIPEWORK AND FLUE SYSTEMS
- INSTALLATION OF NEW SWITCHGEAR
- INSTALLATION OF NEW 200 HOURS BULK TANK WITH TRANSFER SYSTEM



Newly installed generators and switchgear in place within the plant room

OUTCOME

Following completion of the installation, the sets were commissioned utilising a resistive load bank test. This was conducted by WB Power's in-house commissioning team, with one of their Commissioning Engineers on site conducting the tests over a 10 day period. Whilst on-site the Engineer was also able to deliver formal training to the Hospital Engineers. A detailed analysis of the project found that the generator and accompanying ancillary equipment was delivered by our Projects Team within predefined time frames and on-budget. All predefined hospital requirements were delivered, meaning the project was a great success for WB Power.