CASE STUDY

HV / LV Services
Hospital upgrade

Critical upgrade of HV/LV infrastructure, overcoming existing limitations and enhancing system reliablity to ensure a dependable power supply and facilitating future technological expansions whilst maintaining uninterrupted healthcare operations.

NHS GLASGOW & CLYDE | HEALTHCARE | GLASGOW UK

Our Customer's **Brief**

The project centered around the critical upgrade of both High Voltage (HV) and Low Voltage (LV) infrastructure at NHS Greater Glasgow and Clyde's facilities, addressing the limitations and risks associated with the existing systems which were beyond their useful life and operational capacity. With the existing HV network unable to be switched live, any faults required full isolation, risking critical supply disruptions. Similarly, the LV infrastructure faced capacity issues and single points of failure, particularly within the maternity and industrial areas, posing a threat to essential medical procedures. This upgrade was vital for ensuring reliable power supply and accommodating future technological integrations, all within the challenging context of maintaining operations in a critical healthcare environment.

The Quartzelec **Solution**

Phase 1 & Phase 2: Strategy and Execution

Quartzelec led the project from inception through to delivery, preparing feasibility reports, tender documents, and overseeing all site works. Split into two phases to manage the HV and LV upgrades with minimal disruption to hospital operations., phase 1 involved replacing HV equipment and implementing standby LV generators to maintain power during transitions. Meticulous planning and co-ordination was essential to ensure services remained uninterrupted, with N+1 generators providing backup through a busbar chamber connected to LV switchboards.

Phase 2 tackled the LV infrastructure challenges, focusing on specific supplies that could not be interrupted. Detailed outage planning and collaboration with clinical teams proved crucial in managing service relocations effectively. A new LV substation for the maternity area, necessitated by space constraints, involved extensive civil and planning considerations.

The Quartzelec **Solution** (continued)

Enabling Works and Comprehensive Testing

Significant enabling works, including the construction of a new LV substation and extensive civil works in the Industrial LV switch room to accommodate new cable trenches were delivered. Throughout the project, meticulous attention was given to testing and commissioning, ensuring all new installations met strict NHS standards for reliability and safety.

Collaboration and Challenges

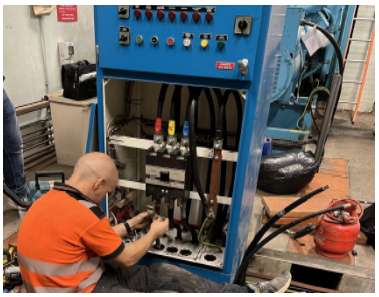
Close consultation with NHS stakeholders and clinical teams was critical to navigating the complexities of upgrading power systems in a live hospital environment. This collaboration was especially crucial during Phase 2's LV changeovers, requiring innovative solutions like temporary generators to maintain critical services during transitions.

Completed amid COVID-19 restrictions, the project's success hinged on adaptive planning, rigorous health & safety protocols and effective stakeholder engagement. The £1.5m upgrade not only modernised the hospital's electrical infrastructure but also ensured its readiness for future technological advancements, exemplifying Quartzelec capability to deliver complex projects
in challenging settings.

Key **Benefits**

Quartzelec successfully orchestrated the critical electrical infrastructure upgrade for this client through meticulous strategtic planning, innovation and execution.

- Operational continuity ensured with minimal disruptions
- Co-ordination with clinical teams and complete transparancy
- Strategic use of temporary power
- Addressed space and service continuity challenges
- Rigorous and comprehensive testing coupled with construction of new infrastructure to uphold NHS safety and reliability standards



Order Value £1.5M

100% operational availability

Technically future proofed

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