

## CASE STUDY

### Project: Belfast City Hospital- Upgrade Site Wide HV Infrastructure

# HEALTHCARE

Scope: Electrical

Value: £1.3 million

Client: Belfast Health Trust & Social Care Trust

Main Contractor: Blackbourne Integrated M&E

Duration: 12 months

Completion: October 2005



#### Brief

This project was located in the site and basement of the Belfast City Hospital Tower Block which is a 24/7 facility. The infrastructure fed a number of adjacent buildings which had to be kept operational and undisturbed at all times.

Programming of works was a critical aspect to the success of the project with constant co-ordination with Health Estates updating them on progress and organising shut downs of specific areas.

This project involved the upgrade of the site wide high voltage infrastructure from 6.6 kV to 11 kV and connecting to 3 No 2000 kVA 11,000 volt standby generator sets into the site wide HV system.

This project was carried out without any disruption to the running of the hospital.

#### Solution

Blackbourne Integrated M&E was very aware from the outset that this contract was located in the heart of a live acute hospital site and that noise, duct pollution, disposal of waste, fire risk and nuisance avoidance to the public, staff and patients were all key areas of concern to the Trust. All aspects of the contract were programmed, planned and agreed with the client before commencement on site.

Blackbourne Integrated M&E ensured that there was supervision on site at all times, this facilitated direct contact with the client's representatives and all other parties to the contract. All long lead items were procured in advance before starting on site and all permits were requested up to 48 hours prior to being required. Weekly meetings were held to ensure programme and budget parameters were achieved. Carefully prepared method statements regarding the changing over of transformers and HV boards were reviewed and agreed with the Health Estates staff.

Temporary standby generators were connected into existing switchboards to ensure no loss of power to the hospital. Changeovers were generally carried out at night too reduce any risk to patients and staff.

Commissioning of the works was planned and submitted to the client 12 weeks prior to the initiation of the commissioning period. Operation and maintenance information was submitted for approval by the client six weeks prior to the project completion date.



**Belfast Health and  
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#### Result

This project was won by Blackbourne Integrated M&E with a price below the clients contract budget, as a result of this the project manager asked us to price a number of additional works during the course of the contract.

We submitted costs in good time for these contract variations and were able to carry out £200,000 of additional work within the original contract period.

The hospital estates staff described this work "as a major organ replacement operation with the patient being fully conscious". This project was successfully completed on time and on budget through good team work with the estates services, project manager and ourselves.

Additional work was awarded to Blackbourne Integrated M&E during the course of this contract because the client was please with both our performance and price.



#### Scope of Work

- 1 Hospital 16 panel HV board.
  - 1 Essential generator supplied 12 panel HV board.
  - 11 11,000/400 transformers and associated ring main unit.
  - 2 LV switchboards.
  - 1 400 kVA generator.
  - 3 Wiring & associated cabling with 2kVA 11000v Generators.
- Lighting, power and fire alarm and all associated Builders work.
- Modifications to sub-stations, trenching and road crossings.



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