

## CASE STUDY

### Project: BBC Electrical Infrastructure

COMMERCIAL

Scope: Electrical  
Value: £1.1 million  
Client: Lands Securities Trillium  
Contact: James Bunyan - 02085767904  
Main Contractor: Blackbourne Integrated M&E  
Consultant: Connell Mott MacDonald  
Duration: 8 months  
Completion: March 2006

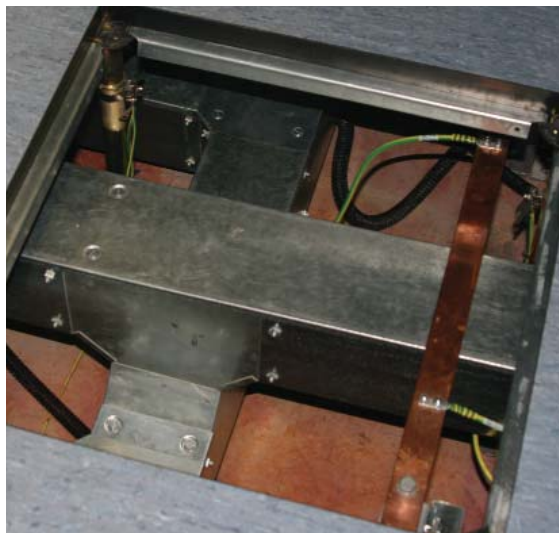


#### Brief

This project involved the replacement of the existing NIE LV supply, the old 800a switchboard and 400KVA containerized generator set with a new NIE HV supply, client HV switchboard and step down transformer and new essential switchboard.

We were the main contractor on this project which involved managing the building and mechanical scope of work, including health and safety and co-ordination requirements technical outline.

The whole purpose of the project was to upgrade the electrical infrastructure in order to make the existing building's power supply extremely robust and to provide spare electrical capacity for a planned future building extension into the staff car park.



#### Solution

This was a competitive tender based on drawings and specifications prepared by Connell Mott MacDonald.

We employed a consulting engineer to develop the control and protection system and to satisfy ourselves that the overall concept of the design was correct.

We had to name the specialist sub-contractors for the switchgear and generators etc. at tender stage and bring them along to the post tender interview. At the post tender interview we had to demonstrate to the client that we could develop the design to provide a fully working system, that this could be done within the programme detailed within the tender documents and that the tender figure would be a fixed price for the scope of the work detailed. The site had to remain operational 24 hours a day, 7 days a week.

Planned shutdowns were possible for limited periods of time (6 hours maximum at night). The majority of the work was carried out within the busy staff car park and staff entrance areas to the building, therefore the work had to be carried out between 8pm and 6am so that there was no disruption to the operation of the staff and services. All work had to be completed and protected on a daily basis.

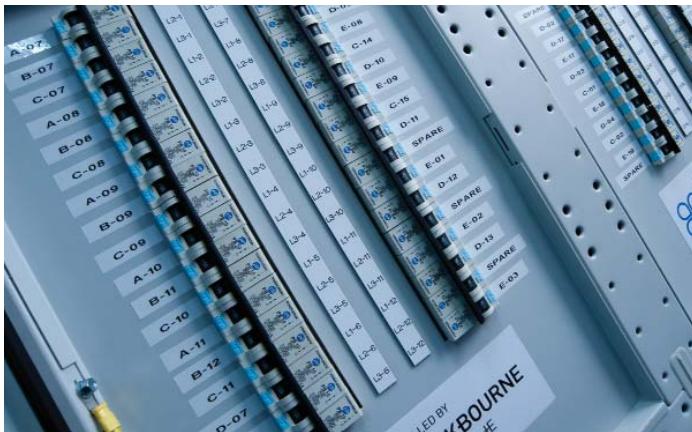
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The project manager made it very clear that under no circumstances could power be lost on site while broad casting.

#### Result

The project was completed on time and on budget due to careful planning. There was no disruption to staff or services.



#### Scope of Work

- Remove existing switchboard from Broadcasting House (note switchboard has asbestos content). Also remove existing generator and oil tank in yard.
- Install a new LV generator and oil tank adjacent to the flues in yard and extend existing concrete base to support generator.
- Construct concrete duct in the yard.
- Install new MV/LV transformer in the yard, also to include associated concrete foundation.
- Form new switch room at ground floor level in the main building by altering the rear doorway to the yard and adjacent store room. Install new switchgear in room.
- Form new landlord and NIE switch rooms at ground level in the TV block. Alter existing building to form switch rooms and install switchgear.
- Install new 11kV supply and new MV and LV cabling.
- Install new load management system.
- Install active harmonic filters.
- Test and commission complete Installation.

## BLACKBOURNE Integrated M&E

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