

LONDON UNDERGROUND - LIVERPOOL STREET STATION



BACKGROUND

The Liverpool Street station works were required because of the redevelopment of the existing London Underground electrical substation under the Crossrail Project. The existing substation was moved to a new location adjacent to the Metropolitan Line tracks, to the west of Liverpool Street station.



SCOPE

The scope of works required us to supply, install, test and commission the equipment within the new substation.

- Three 2.5MW, 11kV AC/630V (and 750V) DC transformer rectifiers
- Two 1.5MVA, 11kV/433V auxiliary transformers
- One 10 circuit HV switchboard, 11kV, 1,250A busbars, 25kA fault rated
- One 400V three phase and neutral LVAC switchboard with 2,500A busbars
- Positive and negative DC switchboards, with 6,000A busbars
- A 110V battery and charger system for tripping supplies
- A SCADA system comprising of an RTU and marshalling cabinet located on each level of the new substation
- An internal substation earthing system located on each floor level
- One DNO low voltage supply for substation 'essential' services
- One change-over contactor panel, operating on loss of 'normal' supplies to maintain 'essential' supplies

To accommodate the new substation, existing equipment and cabling required extensive modifications.

CHALLENGES

The accelerated timescales requested by Crossrail posed a resourcing challenge and required significant amendments to the programme.

The document approval process was challenging, given the tight timeframes, and the large number of interfaces with other stakeholders and contractors.

The requirement to minimise disruption to bus and pedestrian routes, as well as the operational rail in and around Liverpool Street, posed significant challenges.

The limited space for delivery and storage of large equipment also posed issues.

ACHIEVEMENTS

Bringing in additional appropriately skilled resources allowed us to complete the work in the shorter, revised time period. We also recruited additional site management to oversee faster site works.

The shorter timeframe also required us to work collaboratively with all other contractors and stakeholders outside of the contract scope, to expedite the processes, procedures and, ultimately, the works themselves.

Successful collaborative working with all parties, with strong communication streams and interfacing, meant that the final date required by Crossrail and Vinci was met and our performance was well received by all stakeholders.

London Underground now has a brand new, fully operational substation, which was completed with no disruption to the operational railway. Crossrail has benefited from timescales being met, allowing the remaining elements of the Crossrail scheme to continue within the area.

KEY STATS

£6.4

million final project value



year contract



Completed ahead of schedule

CONTACT

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