Case Study

RJ POWER
An Ipsum Group Company

Royal Opera House Transformer Installation
RJ Power Networks

Overview of works

RJ Power was tasked with replacing two Cast Resin Transformers at London's Royal Opera House. The existing had reached their design life expectations, so it was time to replace all in a phased process, with one more to replace in the summer of '26.

The process included the replacement of all the transformer single core cables, to supply and fit a bespoke busbar system to connect to the LV panel and to introduce a new thermal protection scheme. To complement the transformer works and satisfy the resilience works, we also retrofitted the incoming Masterpact M ACBs with MTZs, including new chassis, doors, controls and Castell key interlocks.

Key challenges

The new TCS deployed a hot-standby AB Control Logix PLC system complete with distributed I/O and RTUs that communicated via a GPRS data network. The TCS upgrade included the design and installation of a new resilient fibre-optic network configured in a ring typology throughout the estate providing connectivity for the tunnel assets. The tunnel assets con-trolled and monitored by the new TCS include but are not limited to; Tunnel Lighting, Variable Message Signs (VMS), Emergency Escape Lighting, Linear Heat Detection, LV Distribution, Sumps and Pumps, Tunnel Facilities incorporating Radio Rebroadcast, Emergency Doors, Telephones and Fire Hydrants.

ROYAL OPERA HOUSE

"RJ Power have been instrumental in the successful replacement and upgrade works for the HV/LV transformer and LV air circuit-breaker works that have been carried out over the past two summer shutdown/ maintenance periods."

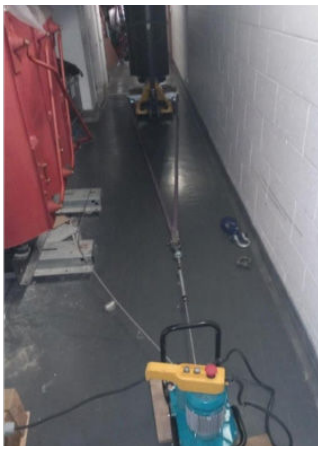
Jo Lilley, Senior Technical Project Manager, Royal Ballet & Opera

Our solution

The team sourced two Tier 2 aluminium-wound cast resin transformers from SGB-Smit Group. This model's more compact design allowed us to retain the existing transformer enclosures, meaning only internal copperwork modifications were required to achieve the necessary clearances between live conductors and earth.

To maintain building operations during the works, MEMs Power Generation provided a temporary supply via an 800 kVA generator.

Given the exceptionally tight route from loading bay to switch rooms, specialist plant movement contractor NIS was engaged to manage the manoeuvring process. Both transformers were safely delivered ahead of the planned weekend installation, and the team successfully completed the installation on schedule and within budget, ensuring minimal disruption to the Royal Opera House's operations.



Delivered on schedule

Zero harm delivery service

Technical expertise