Great Western Electrification

The Greater West Programme is responsible for ensuring the electrification of the rail infrastructure to enable a new generation of electric and bi-mode trains to operate from London Paddington to Cardiff. One of the three milestones completed was Didcot Parkway to Bristol Parkway.

This is the first big rail electrification project for 20 years in the UK and is the biggest investment in the Great Western railway since Brunel built it more than 150 years ago. The project is impressive on many levels; not only for its sheer scale, strategic importance, technical and logistic complexity, but also as an exemplar in collaborative working and innovation.

It is a key part of the Government's rail strategy as electrification promotes cleaner, more reliable travel and will help reduce the cost of running and maintaining the railway.

For the Greater West Programme team to electrify the railway line, they took on the ambitious and complex task of installing the Overhead line equipment (OLE), which refers to the overhead wires and supporting infrastructure that carry electricity at 25,000 volts to power electric trains.

The following figures show the sheer scale of the programme in terms of construction:

- 9,050 Foundations (concrete and steel)
- 7,302 Masts
- 1,352 Booms
- 2,037 Twin Track Cantilevers
- 1,777 km Wiring
- 470 Switches
- 60 Bridge Reconstructions
- 86 Bridge Parapet Extensions
- 90 Power Line Diversions

OLE has not been designed and built on this scale for years and the team had the additional challenge of completing all the works whilst the current train service was maintained and with minimum disruption to lineside neighbours. The OLE support system had to be bought into the 21st century with modular steelwork that could be installed in a relatively short time utilising standard railway possessions to limit impact on the customers and that could also be installed in high volumes by the High Output Plant System.

The High Output Plant System and Material Delivery Centre are other outstanding examples of innovations and best industry practice leading to better, safer and more efficient delivery.