

CLIENT

Hither Green Signalling

CONTRACTOR

Rail UK

SUB CONTRACTOR

Balfour Beatty

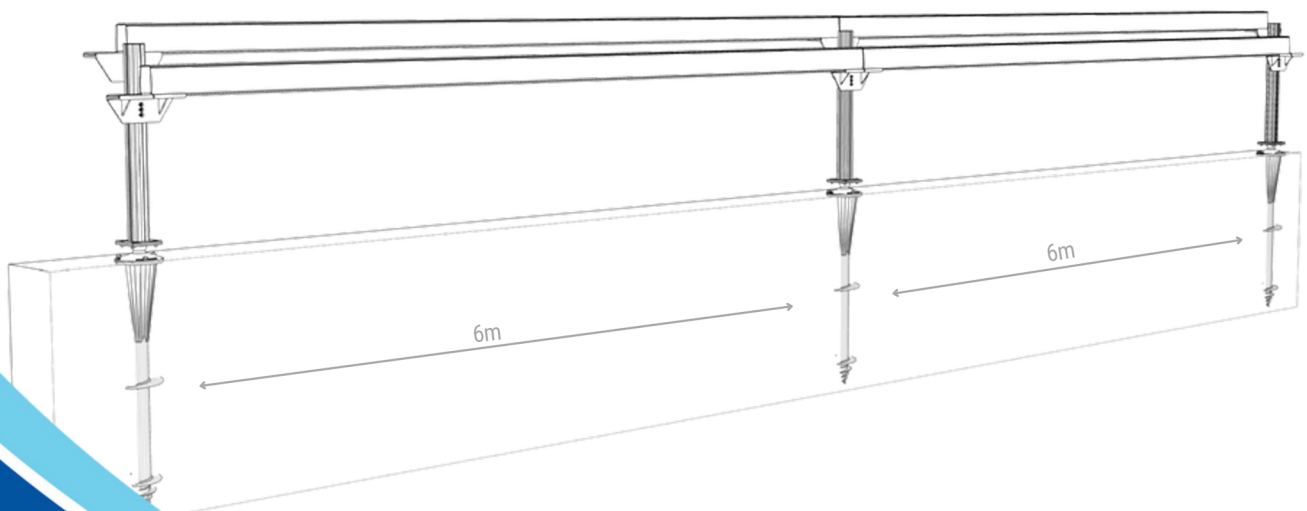
At the commencement of the Hither Green Signalling Renewal project, our team recognised the opportunity to improve both the efficiency and sustainability of our standard construction materials and methods. Through introducing the Anchor Screw foundation system, we have promoted a 25x25 initiative through reducing on-site activity, realised cost savings and contributed significantly towards delivering in-line with Balfour Beatty's Sustainability Blueprint.

The Measures

The Anchor Screw foundation system replaced the need to use cast in-situ posts to support elevated cable route, although the system can be used to support a variety of different super-structures. The steel screws are driven into the ground from the surface, following a ground clearance check which is completed using 3D Ground Penetrating Radar. The hemi-spherically domed heads then allow for up to 7 degrees of vertical alignment correction, in the case the screw has been knocked off alignment during driving.

As the system had not been used on Network Rail infrastructure previously, it was crucial to work with our Client, Network Rail, to ensure full buy-in throughout design and construction. The subsequent approval we received clearly shows both the collaborative relationship between client and contractor, and the obvious value this system could provide.

Authorisation for the use of the Anchor Screw system was obtained from Network Rail. This is the first time the system has been installed on Network Rail infrastructure. Approval was gained and the system was installed on the Hither Green Signalling Renewals project resulting in multiple benefits for the project and our customer.



Result

The Anchor Screw system was installed for the first time in February 2020. During the first shift 124 screws were installed in five hours, enough for 744m of elevated route, with no on-track plant required and zero accidents or incidents. A summary of benefits can be seen below:

- 60% time saving on foundation installation
- 40% cost saving of £369/m to £221/m (derived from man hour savings, elimination of plant requirements, reduced possession requirements)
- 73% embodied carbon reduction on materials, equivalent to 13920kgCO₂e and 89.4% material saving
- Zero on-track plant and zero water consumed
- UK manufacturing and local materials, eliminating mainland European transportation miles
- No noise or HAVS risk

