CASE STUDY:

EV Bus Charging Depot, London

Fibrelite Custom Manufacture Retrofit D400 Trench Covers for EV Bus Charging Depot

This EV bus depot required a swift replacement for their heavy concrete trench covers over their HV cable trench to remedy manual handling issues. Fibrelite supplied a custom engineered and manufactured modular trench cover solution which could be retrofitted directly within the precast rebate. The cost saving benefits of this proposal was of great interest to the contractor (who specialise in the renewable and low carbon energy sectors) and the end user.



This busy bus charging depot raised manual handling concerns over previously installed concrete covers



Fibrelite covers enable easy, swift access to the EV charger power supply trench for maintenance and repairs

Key Requirements

- It was essential for any disruption of normal operations at this site be kept to an absolute minimum as it is a central hub which is crucial to the service of numerous busy London bus routes.
- Speed of replacement: some sections of concrete covers were already showing signs of failure.
- A retrofit replacement which could fit the existing rebate to minimise upheaval to site operations.
- A custom moulded 'shaped' cover to accommodate the phase 1 trench directional turn.
- D400 load rated trench covers which complied with EN 124 classification whilst being light enough for safe manual removal by site operatives (the weight of their previously installed concrete covers posed a potential health and safety risk).

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Cracks observed in previously installed concrete covers



Fibrelite trench covers custom designed to fit existing precast rebates

The Fibrelite Solution

- Fibrelite custom designed and manufactured bespoke covers within the cover replacement programme.
- Cost savings were made on the installation as the retrofit covers fitted directly into the existing precast rebate, minimising installation costs and downtime.
- Cost savings were also made on the day-to-day operation of the site, as removing and replacing the covers can now be done safely by 2 people instead of requiring specialised lifting equipment.
- Monolithic structure: Fibrelite covers are designed to not delaminate over time and are designed for long term use with minimal maintenance required.
- Fibrelite uses adjustable tooling for the manufacture of bespoke GRP composite trench covers, which was crucial for the retrofit design required in this project.
- Fibrelite produced a customised 'shaped' trench cover to terminate phase 1, in readiness for phase 2.
- Fibrelite covers offer a far superior strength-to-weight ratio compared to concrete, meaning that their trench covers perform to the specified load-bearing standards, while being lightweight enough for safe manual handling, allowing fast, safe access to the HV cables.
- Fibrelite trench covers – even when wet – have anti-slip/skid properties far exceeding health and safety advisory limits.



Fibrelite trench covers enable safe manual removal and replacement as pictured on the right (image of a different site used for illustration purposes)



Fibrelite covers' anti-skid tread pattern far exceed health and safety advisory limits