

What's happening?

Best practice on TLP KO2 SRA Climate Change Adaptation and Network Resilience

Overview:

A changing climate will result in changing weather patterns. In the UK, climate change is projected to result in more winter rainfall, drier and warmer summers and frequently more severe weather conditions. Siemens has a key role in helping Network Rail achieve a resilient railway network. Equipment selection, design and siting are key considerations to ensuring signalling solutions continue to function effectively under the changing climate and related weather conditions.

There are several initiatives we've undertaken on the Thameslink programme to improve network resilience:

REBs and flood resilience

Flooding was identified to be a risk, and 100 year flood predictions were used to identify key locations where REBs needed to be raised onto platforms to reduce risk and impact of flooding on the equipment (see fig 1).



Fig 1: REB in position; REB raised concrete platforms

Resilient disconnection boxes

Increased equipment IP ratings (for water and particulate ingress) for equipment, such as IP65 disconnection boxes for cables, which mitigates the impacts of wind (in terms of driving moisture into cases), flooding and melting snow. This was achieved through introducing a different enclosure.

A vent was also installed into the cavity wall to help regulate the temperature due to the presence of heat producing equipment. The disconnection box was powered under load for a period of 3 months to monitor heat/condensation throughout day/night and mixed weather conditions with excellent results (see fig 2). This innovation has now been deployed on the Thameslink Programme and the Sutton to Wimbledon (Victoria Phase 2) project.

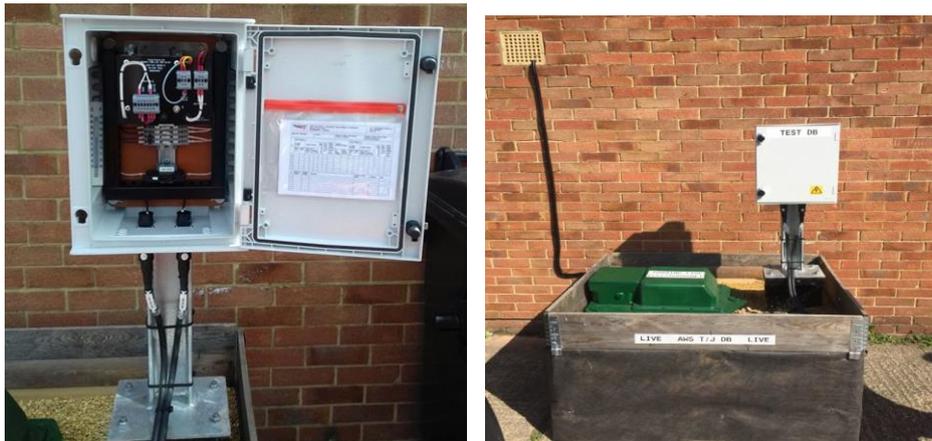


Fig 2: disconnection box; & disconnection box under test conditions

Benefits:

- Ensures a more resilient railway going forward, and crucially when the asset is passed to Network Rail
- Provides real world examples of innovations and initiatives to bring into future projects

Challenges:

- Challenges associated with equipment and asset alterations/changes

Meeting our objectives & targets:

This initiative is aligned with the following TLP Sustainability Strategy Objectives:

- **Objective 14 [closed]:** To identify opportunities to implement new technologies and processes to future proof the rail network against climate change