

Bellenden and Westdown Bridges (Network Rail)

Upgrading SE London's rail network

£2.3m

/ Project value

March 2017

/ The project commenced

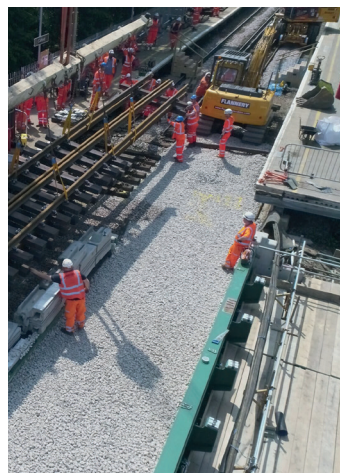
June 2018

/ The project was completed

As part of Network Rail's overall £78m investment in key asset maintenance, we delivered crucial upgrades to South East London's rail network. Essential bridge replacements and supplementary works were completed under abnormal track possessions at Bellenden Road Underbridge (Southwark) and Westdown Road Underbridge (Lewisham). Both projects involved the replacement and reinstatement of two underbridges within a restricted 72-hour rail possession. The bridges carry National Rail, London Overground and Thameslink commuter services, as well as providing a busy thoroughfare for railway freight services.

The Brief

Committed to improving and upgrading its rail network, Network Rail tasked us with replacing two rail bridge decks, under possession. The Bellenden Bridge project required two new SDD U decks while the Westdown Bridge scheme incorporated the construction of two new SDD U decks and adjacent platforms.



"There was a tremendous amount of planning done in advance, which allowed us to progress each project smoothly even with the challenges presented,"

Jonny Kerr
GRAHAM Rail Director

“These complex bridge replacements were completed by our teams through their meticulous planning and technical expertise. The team worked closely with our various supply chain partners, stakeholders and Network Rail and their partners to ensure that there was minimal disruption to the rail network,”

Jonny Kerr
GRAHAM Rail Director

The challenges

The works required the erection of heavy lift cranes, including a 350t crawler crane and a 500t mobile crane, on the roadways adjacent to each bridge location in advance of the railway closures. In addition to the restricted 72-hour rail possession, the complexity of the works was made even more challenging by the severe weather conditions over the bank holiday weekend, with heavy thunder and lightning hampering crane lifts at critical times. The team was also forced to resolve a number of issues as the project progressed including the support and protection of E&P and S&T cable routes.

GRAHAM's solution

Both projects centred on the replacement and reinstatement of two underbridges within a restricted 72-hour rail possession. As part of the Bellenden Road Underbridge upgrade, our team replaced the existing 12m single span deck with two new Network Rail standard U decks, which weighed 68t each. The Westdown Road Underbridge project also involved the replacement of the existing 12.5m bridge with two new Network Rail standard U decks and included the replacement of new station platforms at Catford Station. Each project featured propping to restrain the existing vaulted arch abutments from potential overturning, the removal of tracks and ballast, the demolition of the existing bridge and the installation of the new superstructure decks. New pre-cast concrete cill slabs were placed at each location. Additionally, the reinstatement and tamping of the tracks were completed before reopening to rail traffic.

Outputs & Benefits

- / **Rail possession:** The bridge replacement and supplementary works took place under abnormal track possessions within a restricted 72-hour rail possession
- / **Workforce:** At its peak, over 100 people were on site to deliver each of the respective projects
- / **Strategic route:** The bridges carry National Rail, London Overground and Thameslink commuter services, as well as providing a busy thoroughfare for railway freight services



For more information on how we're delivering lasting impact:

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