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## Dartford Crossing Ventilation Stacks

### The problem

Undertake extensive concrete repairs to the inner surface of the two ventilation stacks for the Dartford Crossing Tunnel at night, removing all access equipment after each shift to ensure the extraction fans could operate during the day. The top was inaccessible by MEWP and previous works employed a large crane and man riding basket.



The conical Kent side ventilation stack

### The solution

Working with consulting engineers Jacobs, Vertical Technology devised a plan of action to allow their rope access team to climb up the shafts, install ropes at the start of each shift and then clear all access away in the morning.

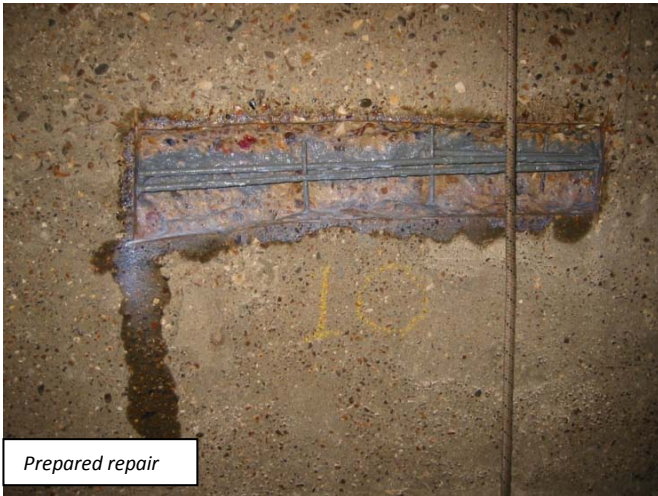
- Initially climb each stack and install rope access anchor bolts around the top rim.
- Load test all access attachments and practice rescue procedures including emergency demob and reactivation of fans.
- Install protection for the fans and roadway below.
- Survey and test concrete.
- Break out and repair approximately 90 repairs.
- Pull off test the repairs.





Initially each stack was climbed

With a tight shift period the team worked in difficult location to complete the contract on time and within budget.



Prepared repair



Finished repair





Pull test dolly