



**Spotlight on...**  
carbon reduction

**CONSIDERATE  
CONSTRUCTORS  
SCHEME**

# Case Study: Rochester Bridge Trust

## Net Zero Carbon Management

Rochester Bridge is owned by medieval charity, the Rochester Bridge Trust, and comprises three structures crossing the tidal River Medway.



The Trust's journey to Net Zero Carbon management began in 2019, with the calculation of its carbon footprint for all routine bridge maintenance activities. Between 2020 and 2021, options were evaluated to reduce emissions from routine processes and introduce low-carbon infrastructure. Since 1 April 2022, all maintenance activities on Rochester Bridge are carried out at Net Zero Carbon.

Working with Term Maintenance Contractor FM Conway, the Trust reduced emissions for core maintenance activities by more than 88%, with the remaining residual emissions offset by tree planting.

This was achieved in a three-stage process: reviewing the means and frequency of activities; switching to electric plant utilising renewable power; and replacing

fuel such as diesel with more environmentally-friendly alternatives.

Key to the pace and extent of carbon reduction has been the determination to "just do it", getting on with making changes – no matter how small – as and when it became possible.

This was supported by the creation of a bespoke calculator to evaluate the carbon impact of alternative solutions for each activity. Carbon impacts are converted from conventional units of tCO<sub>2</sub>e into the number of trees which would be needed to sequester the same amount of carbon. This simple approach makes it far easier to understand relative emissions quickly, and helps to communicate the consequences of options to engineers and the public.

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The option evaluation process puts fitness for purpose and quality first, then carbon, then cost. Nonetheless, the overall cost of maintaining Rochester Bridge has not increased and value for money has been delivered while Net Zero Carbon has been achieved. In some cases, selecting the lowest carbon method of work has directly reduced costs, e.g. using an electric boat to provide access to repaint a section of river wall cost 10% less than the use of a MEWP, and significantly less than scaffolding.

The changes made to reduce carbon emissions have also delivered other benefits including reduced wider environmental impact and better operative safety. The switch away from fossil fuels has practically eliminated exhaust emissions from maintenance vehicles, creating a more pleasant and healthy local environment for bridge users and operatives. It has resulted in much-reduced noise levels and, in many cases, lighter-weight equipment lowering manual handling risks. Moving from petrol to an electrically-powered safety and inspection boat has reduced the risk of fuel or lubricant leak into the river and is much quieter.



The largest contributor to the baseline carbon footprint was the diesel street sweeper. Operating 365 days, this was responsible for 12.7 tonnes (81 trees' worth) of carbon per year, or 70% of the overall carbon emissions for bridge management. By a combination of additional manual sweeping and reduced sweeper frequency and a

change from conventional diesel to hydrotreated vegetable oil (HVO), the carbon emissions from this activity have been reduced by 90%. An additional benefit has been achieved through the better cold weather performance of HVO compared to diesel, improving reliability.

To maintain Net Zero credentials, maintenance options are subjected to whole life-cycle carbon footprint calculations (embodied and end of life consideration). Suppliers which are unable to provide carbon data are not used. The carbon footprint of the in-house bridge team's activities is also tracked.

These issues are communicated to the workforce (staff and contractors) and the community (local and engineering).

The workforce is updated in staff meetings and face-to-face updates, many staff also regularly engage with the Trust's social media to see how the charity is portrayed to the community. Local people are kept informed via social media, a website and local travel updates. The social media accounts are widely viewed in the UK and international bridge communities, sharing the good practice widely. There has been significant interest in the Net Zero Carbon achievement, and the Chief Executive has made many presentations during the last year to explain the Trust's approach.