



Blackfriars Rail Bridge & Station

United Kingdom



Project

As part of a five-year project, the task of protecting the existing Blackfriars rail bridge and the new station that runs along its length presented a specific challenge for Sherwin-Williams in that a common protective coating system for old and new steelwork was preferred. With the River Thames below, inherent issues of dampness and humidity meant that the choice of coating would be of particular importance, because Network Rail specified a minimum service life of 25 years to first major maintenance.

The roof of the new station was covered with 4,400 photovoltaic panels, providing up to half of the energy needed to run the railway station below and making it the world's largest solar-powered bridge. First Capital Connect, which manages Blackfriars Station, expects the panels to cut the station's carbon emissions by an estimated 511 tonnes a year, further reducing the carbon footprint of its train routes to the south east of England. As a major advertisement for London's efforts to become a sustainable city, with tourists and workers viewing the landmark as they enter the capital, the project was of paramount importance.

Substrate: Steelwork.

Requirements: 25 years protection against high humidity and salinity levels.

Specifications: Macropoxy™ L674 Epoxy Blast Primer, Macropoxy™ M922 Glass Flake Epoxy, Acrolon™ C137V2 Acrylic Urethane Finish.

Area coated: 60,000 m².

Client: Network Rail.

Main contractor: Balfour Beatty.

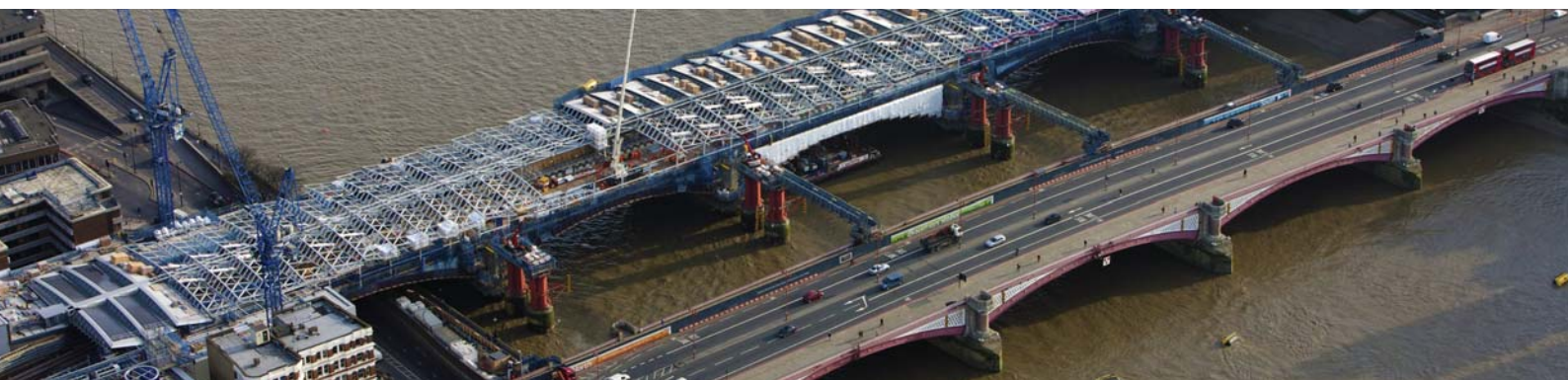
Consultant engineer: Severfield Group.

System

Because of its success in the repainting of the Forth and Tay Rail bridges and all the new steelwork for Leeds station, a glass flake epoxy system was chosen. The main contractor, Balfour Beatty, selected the Severfield Group to supply and fabricate the steelwork for the new station and Pyeroy to repaint the existing bridge. Both sub-contractors selected Sherwin-Williams Protective & Marine Coatings EMEA as their preferred paint supplier.

The existing paintwork on the rail bridge was removed by abrasive blast-cleaning. The three-coat repainting system comprised; Macropoxy™ L674 Blast Primer at 25µm minimum dry film thickness (mdft), Macropoxy™ M922 Glass Flake Epoxy Intermediate at 400µm mdft and Acrolon™ C137V2 Special Finish at 50µm mdft. A stripe coat of Macropoxy™ M922 at 200µm mdft was applied between coats 1 and 2.

All the new steelwork that formed the station canopy and the entrance/ticket halls located at each end of the bridge were coated with the glass flake epoxy protective system. In total more than 60,000 square metres of new and old iron and steel was coated. The benefits to customers using this system for the bridge and highways sector comes in terms of labour saving costs, lower energy usage and volumes of paint required. In addition, the higher volume solids coating system meant that fewer volatile organic compounds (VOCs) were emitted during the process.



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Europe, Middle East & Africa: +44 (0)1204 521771

North America: +1 800 524 5979

Asia: +8 621 5158 7798

sales.uk@sherwin.com

www.sherwin-williams.com/protectiveEMEA