

3D Modelling and Animation Minimise Disruption During Bridge Replacement

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Replacing an over-road rail bridge proceeded smoothly thanks to 3D modelling and real time data capture.

PROJECT	Burnaby Bridge
CUSTOMER	Network Rail
LOCATION	Portsmouth
CONTRACT	One Team Wessex

Issue

The Burnaby Road Bridge is located between Portsmouth Harbour station and Portsmouth & Southsea station. A new over-road rail bridge was required to replace the existing worn out structure.

Precise planning was needed to ensure there was minimal disruption while the replacement bridge was installed. Allowing site teams to access and capture digital data using iPads was essential to ensure that work flowed smoothly and to plan, and that asset data was collected for an efficient handback process.

Solution

A full 3D model was created with the ability to attach data to each site element. A 3D animation of the works was used to demonstrate and test the feasibility of the methodology.

Each element had its own Inspection Test Plan with photos, documents, QA checklists, comments and information to create a workflow.

The development process for the project and the BIM implementation was started half a year before the work started on site so any issues were easy to solve.

During the works, daily diaries, complete with automatic weather, site hours, photos, and general notes were updated via iPads. Digital QA Checklists with auto issue creation and attached photos significantly improved efficiency.

Outcome

Providing access to digital drawings and documents via mobile tablets guaranteed clear information that could be annotated and shared wirelessly. This made data capture more efficient. The full 3D model

improved data organisation and management and the animation of the works allowed for safety analyses and aided in the understanding of the process.

The common data environment acted as a central store for all data and led to an easy and efficient handback process.

