

## The Ordsall Chord, Manchester, UK – an overview

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### Abstract

The Ordsall Chord is a new railway link which for the first time connects Manchester Piccadilly and Victorian stations, cutting rail service congestion, and allowing new rail services to be introduced. The project has been undertaken in a heavily developed city centre environment, interfacing with several important heritage assets including the Liverpool to Manchester railway, the world's first inter-city passenger railway, dating from 1830.

The scheme comprises over 30 new and widened spans in a variety of structural forms, supporting nearly 700 m of track, including major structures spanning the River Irwell and the Trinity Way dual carriageway highway. The structures are united visually by an architectural “ribbon” concept which has significantly affected the nature and complexity of the structural designs.

Significant features of the works include the UK's first network arch bridge; innovative structural monitoring; geometrically complex concrete arch structures; partial reconstruction of a critical heritage asset; and state-of-the-art BIM processes, including the UK's first bridge to be built from the 3d design model without the use of conventional 2d design drawings.

**Keywords:** Bridges; railways; railroads; steel; concrete; BIM; heritage; network arch; structural monitoring.

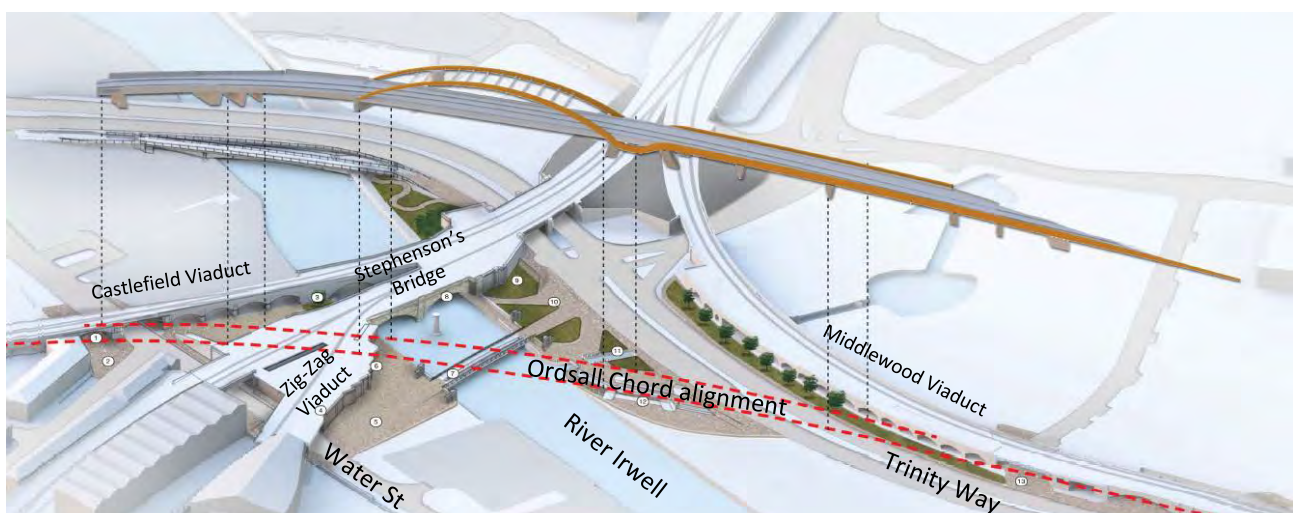


Figure 1: The Ordsall Chord