



JARROLD BRIDGE

A UNIQUE DOUBLE PROPPED CANTILEVER PEDESTRIAN BRIDGE

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Stephen has 20 years' experience as an architect working on large scale transport and infrastructure projects. As leader of Bridge Design in Ramboll's London office, Stephen's work has helped maintain Ramboll's position at the forefront of modern pedestrian bridge design.



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Dan was Lead Engineer on Jarrold Bridge from inception through to completion and has played a key role in the successful delivery of many pedestrian bridges in recent years with Ramboll UK.



Summary

The Jarrold footbridge opened to the public in January 2012, linking the new St. James Place development to the historic city centre of Norwich. As well as providing a crossing, the bridge invites visitors to linger, enjoy the river environment and make the most of distant views of the magnificent Cathedral.

The optimum use of materials is one of the key contributions to sustainability available to bridge designers. With Jarrold Bridge Ramboll aimed to maximise the sustainable use of resources. We have produced a structural design that is very lean. Everything is working and working hard, but doing so effortlessly. This has been made possible through the innovative use of sophisticated software in its development.

This paper relates the whole design and construction process. How parametric 3D modelling was used to trace the most efficient path through interwoven sustainable transport routes and the natural features of the site.

We describe how the form of the bridge evolved from the unique characteristics of the site and the engineering logic, which substantiates this subtle structure. We describe in detail the structural principles, which enabled the architectural concept for a unique bridge form that gently floats across the water with little apparent support.

Keywords: innovation, aesthetics; dynamics; structural efficiency; sustainability; materials; context; steel structure; parametrics

1. Introduction

1.1 Concept

Norwich owes much to the River Wensum. It has long been its lifeblood, at the heart of the movement of its people and commerce, linking the city to its historic European trading partners. Jarrold Bridge is the latest in a long tradition of bridges and fulfils the 20 year old dream of Peter Jarrold, our client.