A tale of two bridges: the Iron Bridge and Coalport Bridge, Shropshire

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ABSTRACT: The Iron Bridge (SAM Salop 106), built in 1779, and Coalport Bridge (SAM Salop 341) built in timber in 1780, rebuilt in 1800 and again, in iron, in 1818, span the River Severn in the World Heritage Site of the Ironbridge Gorge. They were surveyed from 1999 to 2001 and 2001 to 2004 respectively. The Iron Bridge proved to be a palimpsest of minor and major repairs. The Coalport Bridge survey highlighted the apparent lack of alterations to the ironwork of 1818, whilst supporting the documentary evidence for the three major phases of construction in the bridge's history. Despite this, both structures retained some similar major component parts albeit comprising individual methods of construction. Evidence from both bridge surveys pointed to advances in the understanding of bridge construction from the eighteenth to the nineteenth century.

Introduction

This project included the most comprehensive survey yet undertaken of the Iron Bridge, although much was known from work by Hume (1980). Hume had detailed specific joint formations and components by means of drawings and photographs, emphasising the series of numbered radials found on frames A and E. Much of the history of the bridge appears in the two editions of Cossons and Trinder's book on the bridge (Cossons and Trinder 1979 and Trinder and Cossons 2002), and is not discussed here. Due to this accumulated knowledge of the structure, the Iron Bridge has long been accepted as an iconic symbol of Britain's industrial endeavour, constructed in 1779 'at Coalbrook Dale' under the direction of Abraham Darby III (Trinder 1979, 114-115). The bridge was unique in appearance, creating much interest among foreign industrialist travellers to the area.

Modern metallurgical interest in the bridge's parts has led to some analysis of components, undertaken from 1947 to 2003. However, the results of only one test related to original ironwork, as the others were of later components.

The new project expanded from a programme of repainting the bridge organized by English Heritage in 1999, the scaffold for which gave access to all areas of the structure. This new work has added to our understanding of the bridge, of the typology of its radials, of component manufacture, erection sequence, and previously unrecorded joint details (IGMTAU 2002A).

The survey undertaken by Ironbridge Archaeology aimed to produce a three-dimensional computer-based model of the bridge which was to aid future research and analysis of the structure, and to support the record of the historical research and surveys (De Haan 2004). The three-dimensional CAD model was completed, and further analysis, such as input of stress-related programming, was planned by English Heritage.

A similar survey project was begun on the Coalport Bridge in 2001, accompanying engineering work to the structure. This bridge, built in timber in 1780 and rebuilt in timber and iron in 1800 after a flood (Blackwall 1985, 21), was replaced in iron in 1818. Few bridges from this period of building in iron survive, although many design contracts were undertaken (Trinder 1979, 118-119); the majority were based