



Panel for Historical Engineering Works

for

Stapenhill Suspension Bridge

Details

Name of work:	Stapenhill Suspension Bridge
Place:	Burton on Trent
HEW no:	1785
HEW class:	T4d8
PHEW area code:	09
Ordnance Survey sheet number:	128
National Grid Reference:	SK 253219
Description:	
Significant features:	An unusual suspension footbridge over the River Trent. Suspension cables are formed from flat wrought iron plates rivetted together to give a cable 8in wide and 1.1/2 in thick. An interesting approach viaduct over the flood plain of 81 spans with modern steel decking supported on original cast iron columns.
Accessibility:	public access at all times
Owner	Staffordshire CC
County/Unitary Authority:	Staffordshire
District Council:	East Staffordshire
SMR Office:	Staffordshire
Construction date:	1888 to 1889
Opening date:	1889Apr13
Designers, with dates:	Langley, Alfred A (Chief Engineer, Midland Railway)

Resident Engineers, with dates:	
Contractors, with dates:	Thornewill & Wareham, of Burton on Trent
Current status:	LII
Current condition:	in good condition and full use
Subpanel grade	
Location of other records (e.g. manuscripts, drawings, technical papers, photographs, etc):	
Illustrations attached (no.):	1 b/w print; 6 colour prints
Similar works:	
Recorded by:	Roger Cragg
Date recorded:	01 Sep 1990
Amended by:	
Revised by:	
Revision date:	
Latest inspection by:	P S M Cross-Rudkin
Inspection date:	01 Aug 2009

Supplementary Record

Further description

a suspension footbridge and associated approach viaduct over the River Trent between the town of Burton upon Trent (north bank) and Stapenhill (south bank).

SUSPENSION BRIDGE - Main span 120ft, two side spans of 60ft. Suspension cables are formed from three flat wrought iron plates, each 8in. wide and ½ in. thick, rivetted together by two rivets at 4in. centres to give a cable of 8in. by 1½in. section. Each plate is 18ft long but joints between plates are staggered to give one joint every 6ft. Cover plates at joints are 2ft long and 3/8in. thick, top and bottom. Suspension hangers are 1.25in. diameter rods at 6ft centres, bolted to the top of the deck truss.

Suspension rods are vertical in elevation but inclined in section, the horizontal spacing of the cables being greater than the width of the bridge.

Main trusses are X-lattice in panels 6ft long and 5ft 6in. high. Vertical members are T-section, 5½in. x 8in., horizontal top member is T-section, 6½in. x 6in., bottom horizontal member is made up from L-section, 3in. x 6½in., above T-section 6in. x 6in. Lattice is formed from 3in. x 3/8in. flat strip. There are decorative cast-iron flowers on each lattice intersection (5 per panel). Towers below deck level are two 6ft diameter cast-iron columns. Above deck level the towers are square cast-iron with decorative ribbing, 4ft 8in. x 3ft 8in. at deck level, tapering above. Portal between towers is a cast-iron beam with inscription (see below). There is a modern street lighting lantern suspended below each portal.

Width of footway between trusses is 11ft-6in, overall width of deck is 12ft-5in. Deck is formed of timber planks laid longitudinally (to accommodate deck camber - see below) supported on transverse lattice beams with diagonal flat bracings. Transverse lattice beams are 12ft-5in. long, 12in. deep in the centre and 6in. deep at the ends, thus giving the deck a marked camber outwards. The anchor blocks are in concrete with stone facings 12ft-5in. long and 3ft-2in. wide over 4ft-6in. length, the remaining 8ft being 2ft wide.

APPROACH VIADUCT - 1,673ft long across the flood plain of the River Trent on the north side of the bridge. 81 spans. At the north end, span 80 crosses a small backwater. construction is modern steel plate decking on modern 10in. x 3½in. steel channels supported on original 6in. diameter cast-iron columns. Width of footway approximately 11ft 6in. Modern tubular steel handrail 3ft 5in. high. Spans 1 - 69 are generally 20ft span (spans 30, 44-46 and 69 are shorter) but spans 70-81 are generally about 30ft span. Access to the river bank is provided at spans 33 (modern) and 69 (original). Span 16 is now a solid access ramp.

COVERED AREAS - There are two roofed areas approximately 15ft long with timber walls and a modern roof supported by original iron rod roof trusses. One area is situated immediately to the south of the main bridge, across the approach ramp. The second area is approximately half way along the viaduct (over spans 44 and 45). Their purpose is unknown but they may have been provided to give shelter to persons using the footway as it is very exposed to the weather.

INSCRIPTIONS - The date "1889" is cast into the cable tower portals with the inscription "THE GIFT OF MICHAEL ARTHUR FIRST BARON BURTON". On the base of the towers is cast "THORNEWILL & WARHAM ENGINEERS BURTON-ON-TRENT". On the portal of the covered area half way along the viaduct is cast "THIS BRIDGE AND VIADUCT WERE PRESENTED TO THE BOROUGH OF BURTON-ON-TRENT BY THE RIGHT HONOURABLE MICHAEL ARTHUR BARON BURTON AND THE BRIDGE WAS DECLARED FREE OF TOLL BY THE CORPORATION ON THE THIRTEENTH DAY OF APRIL 1898".

The designer is quoted (1) as "Mr.Langley" from the Midland Rly.

Ref. 1 Sherlock, Robert - Industrial Archaeology of Staffordshire - p. 114

Reported by:

Roger Cragg

Reported date:

01 Sep 1990