



River Tyne Crossings & Newcastle Bridges

Local Studies Factsheet No. 1

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PART ONE
RIVER TYNE CROSSINGS

1. HIGH LEVEL BRIDGE

Traffic: rail (upper deck) road (lower deck)

Designer/Engineer: Robert Stephenson and T.E. Harrison

Contractor/Builder: Hawks, Crawshay (ironwork)

Construction: Began 1 Oct 1846, completed June 1849

Opened: 28 Sep 1849 by Queen Victoria.

Trains first crossed 15 Aug 1849 - no ceremony. Road traffic first crossed 4 Feb 1850. Road deck strengthened 1922 to take trams.

Length: 1337ft (407.8m) total 512ft (156.2m)

over water. 6 x 125ft (38.1 m) main spans

Width: c. 40ft (12.2m)

Headroom: 85ft (25.92m) above high water level

2. SCOTSWOOD RAILWAY BRIDGE

Traffic: rail

Designer/engineer: T.E. Harrison.

Opened: 1871. Strengthened in 1943

Closed: Nov 1982

This was a rebuild of a bridge erected in 1839 burned down 1860

Length: 697ft (212.6m) total, 1 x 75ft 6in

(23m) span 5 x 124ft 4in (37.9m) spans

Width: 25ft 4in (7.7m)

Headroom: (rail to water) 22ft 11in (7m)

3. SWING BRIDGE

Traffic: road

Designer/Engineer/Builder: Sir W.G. Armstrong & Co, under Tyne Improvement Commission supervision.

Construction: Began 23 Sep. 1868, completed 1876

Opened: 15 June 1876 (no ceremony).

Length: 560ft (170.8m) total

281ft (85.7m) swing span

Width: 47ft 6in (14.48m)

Headroom: 14ft 6in (4.42m) above high water level

4. NEWBURN BRIDGE

Traffic: road

Designer/Engineer: Sandeman and Moncrieff

Contractor/Builder: Head, Wrightson & Co.

Construction: Completed May 1893

Opened: 21 May 1893 (no ceremony).

Length: 475ft (144.8m) total.

4x103ft 6in (31.6m) span

Width: 28ft (8.54m) roadway

Headroom: 21ft (6.4m) above high water level

5. REDHEUGH BRIDGE (OLD)

Traffic: road

Designer/Engineer: J.W Sandeman and Moncrieff for Redheugh Bridge Co.

Contractor/Builder: Sir William Arrol & Co.

Construction: began 1897, completed 13 Aug 1901

Opened: 13 Aug. 1901 by Mr. R. Cail

Demolished: late 1984

This was rebuild of a bridge erected 1868/70

Length: 1192ft. (363.6m) total

2 x 248ft (75.6m) spans, 2x 168ft. (51.2m) spans

Width: c.40ft. (12.2m)

Headroom: 87ft. (26.5m) above high Water level

6. KING EDWARD VII BRIDGE

Traffic: rail

Designer/Engineer: Charles Harrison

Contractor/Builder: Cleveland Bridge & Engineering Co.

Construction: Began July 1902 completed July 1906

Opened: 10 July 1906 by King Edward VII

Length: 1150ft (350.75m)

Width: 50ft (15.25m)

Headroom: 83ft (25.3m) above high water level

7. NEW TYNE BRIDGE

Traffic: road

Designer/Engineer: Mott, Hav & Anderson

Contractor/Builder: Dorman, Long & Co.

Construction: Began July 1925, completed 1929

Opened: 10 Oct 1928 by King George V

Length: 1304ft (397.72m) total

531ft (161.95m) main span

Width: 56ft (17.08m)

Headroom: 84ft (25.62m) above high water level

TYNE BRIDGE v SYDNEY HARBOUR BRIDGE - WHICH CAME FIRST?

The myth that the Tyne Bridge was the model for the Sydney Harbour Bridge has been perpetuated for many years. **IT IS NOT TRUE!**

Dr. J.C. Bradfield, an Australian engineer submitted full particulars of the quantities and prices of the materials to be used for the Sydney Harbour Bridge before tenders were opened. His design was modified by Dorman, Long and Co. the winning tender, but their changes must have provided a design at least as good as the original, otherwise it would not have been accepted by Bradfield.

Although the Tyne Bridge was completed and in use before the Sydney Harbour Bridge, the following chronology will show that the works for Sydney came first.

SYDNEY

28th July 1923 Turning of the first sod.

24th March 1924 Tender accepted and contract signed.

5th January 1925 Excavations for foundations commenced.

19th March 1932 Bridge opened for traffic.

TYNE

No similar ceremony

December 1924 Tender accepted and contract signed

August 1925 Site work commenced

10th October 1928 Bridge officially opened.

8. TYNE PEDESTRIAN TUNNEL

Traffic: Cycle, foot

Designer/Engineer: Mott Hay & Anderson

Contractor/Builder: Charles Brand & Son

Construction: Began 4 June 1947 completed 24 July 1951

Opened: 24 July 1951, by Alfred Barnes MP, Minister of Transport

Length: 900ft (274.5m)

Diameter: 10ft (3.05m) pedestrian
12ft (3.66m) cycle

Depth: crown of tunnel 16ft (4.83m) below river bed.

Escalator rise 85ft (25.8m), escalator tunnel 200ft (61m) deep

9. SCOTSWOOD BRIDGE

Traffic: road

Designer/Engineer: Mott, Hay & Anderson

Contractor/Builder: Mitchell, Costain, Kinnear, Moddies Group Ltd.

Construction: Began 18 Sep. 1964, completed 20 Mar. 1967

Opened: 20 Mar 1967 by Alderman Peter Renwick

Length: 455ft 7in (138.9m) total main
329ft 7in (100.5m) span

Width: 66ft (20.13m)

Headroom: 25ft (7.6m) above high water level

10. TYNE VEHICULAR TUNNEL

Traffic: road

Designer/Engineer: Mott, Hay & Anderson

Contractor/Builder: Edmund Nuttall Sons & Co. London

Construction: Began 1961, completed Oct 1967

Opened: 19 Oct 1967 by Queen Elizabeth II
Opened for traffic 20 Oct 1967

Length: 5500ft (167.75m)

Diameter: 31ft 3 in (9.53m)

Depth: crown of tunnel 50ft (15.25m) below river bed, 90ft (27.45m) below high water level

11. QUEEN ELIZABETH II BRIDGE

Traffic: rail (metro rapid transit)

Designer/Engineer: WA. Fairhurst & Ptns (Northern)

Contractor/Builder: Cleveland Bridge & Engineering Co.

Construction: Began 1976, completed 1 Aug 1978

Opened: 6 Nov 1981 by Queen Elizabeth II

Length: 115ft 6in (352.7m) total
540ft (164.7m) main span

Width: 33ft 6in (10.2m)

Headroom: 82ft (25.01m) above high water level

12. REDHEUGH BRIDGE (NEW)

Traffic: road

Designer/Engineer: Mott, Hay & Anderson

Contractor/Builder: Nuttall / HBM

Construction: Began 24 April 1980 completed Sep 1983

Opened: 18 May 1983 by the Princess of Wales

Length: 525 ft (160m) main span, 2210ft (674m) between North and South abutments, 2942ft (897m) total length between Scotswood Rd. and Askew Rd. flyover
Width: 52ft (15.8m)

Headroom: 85ft (26.06m) above high water level

13. BLAYDON BRIDGE

Traffic: road

Designer/Engineer: Bullen & Partners

Contractor/Builder: Edmund Nuttall Ltd.

Construction: Began 16 Nov 1987 completed 30 Nov 1990

Opened: 3 Dec 1990 by Queen Elizabeth II

Length: 1089ft (332m) total
354ft 3in (108m) main span
2 x 216ft 6in (66m) side spans
144ft 4in (44m) and 157ft 5in (48m) end spans

Headroom: Mid span 42ft 4in (12.9m) above high water level

14. BLAYDON HAUGHS VIADUCT (Southern approach to Blaydon Bridge)

Traffic: road

Designer/Engineer: Bullen & Partners

Contractor/Builder: Edmund Nuttall Ltd.

Construction: Began 16 Nov 1987, completed 30 Nov 1990

Opened: 3 Dec 1990 by Queen Elizabeth II

Length: 1738ft 3in (30m) total spans
Vary but an average 10ft (31m)

15. GATESHEAD MILLENNIUM BRIDGE

Traffic: Pedestrian & cycle

Designer: Wilkinson Eyre

Contractor/Builder: Harbour and General

Construction: Built by Watson Steel in Bolton, Lancashire and assembled at AMEC yard, Wallsend. Transported and lowered into position by giant crane Hercules II on Monday 20th November 2000

Opened: Monday 17th September 2001. Official opening by Queen Elizabeth II on Tuesday 7th May 2002.

Length: 413ft (126m)

Width: Pedestrian deck – 4.5m at ends narrowing to 3.2m in centre
Cycle deck—2.5m

Headroom: Rises 164ft (50m) above river

The 600 tonne structure operates like a giant eyelid slowly opening, turning on a pivot on either side of the river, to form an arch allowing ships to pass.

PART TWO: OTHER NEWCASTLE BRIDGES

16. ARMSTRONG BRIDGE

Traffic: Formerly road, closed to road traffic 17 July 1963

Designer/Engineer: Sir W.G. Armstrong/Newcastle Town Improvement Committee

Contractor/Builder: W. E. and C. Jackson

Opened: 30 April 1878 by Sir W. C. Armstrong

Length: 552 ft (168.7m)

Width: 25ft (7.62m)

Headroom: 30-65ft (9.15m-19.82m)

17. BYKER BRIDGE

Traffic: road

Opened: By the Vice-Chairman of Byker Bridge Company to pedestrians on 19th October 1878 and to carts and carriages on 27th January 1879 (1/2d toll - withdrawn on 12 April 1895) Deck rebuilt May 1985-March 1986

Length: c. 1130ft (344.65m)

Width: originally 30ft (9.15m), widened to 50ft (15.25m) in 1899

18. BYKER METRO VIADUCT

Traffic: rail (metro rapid transit)

Designer/Engineer: Ove Arup and Partners

Contractor/Builder: John Mowlem

Construction: Began June 1976, completed July 1979

Opened: 11 Nov. 1982 as part of official opening of St. James to Tynemouth section of the Metro

Length: 2674ft (815m)

Width: c. 27ft (8.2m)

Headroom: 98ft (30m) at highest point

19. DEAN STREET VIADUCT

Traffic: rail

Contractor/Engineer: Rush and Lawton

Construction: Completed August 1848

Opened: 29th August 1848

Originally double-tracked, line was four-tracked in 1893 and the viaduct doubled in width to the north of the original.

Length: 80ft (24.4m)

Width: c.50ft (15.25m)

Headroom: 80ft (24.4m)



21. OUSEBURN VIADUCT

Traffic: rail

Length: 918ft (280m)

Designer/Engineer: John and Benjamin Green

Width: 50ft (15.25m)

Construction: Started: 13 Jan 1837

Headroom: 108ft (32.94m)

Opened: 18 June 1839 (opening of Newcastle and North Shields Railway)

Arches rebuilt in iron 1867-9. Originally two-tracked line was four-tracked in 1887 with the addition of a new viaduct alongside and to the north of the original.

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