

**Stevenson, Robert** (b Glasgow, 8 June 1772; d Edinburgh, 12 July 1850). Scottish engineer. He was the founder of the family of engineers commemorated by his grandson, the poet and novelist Robert Louis Stevenson. As engineering adviser to the Northern Lighthouse Commissioners from c. 1806 to 1843, he built many lighthouses. At the Bell Rock sea-tower (1807–11; for illustration *see* LIGHTHOUSE) Stevenson, with John Rennie as chief engineer, followed and improved on the practice of John Smeaton to become the leading exponent of his art and consolidated this role in 1824 with the publication of his classic account of the structure. A later lighthouse, at the Isle of May (1816), is a handsome edifice influenced by both classical precedents and the Gothic style.

By 1825 Stevenson had also developed a large general civil engineering practice and was engaged on road, bridge, rail, canal, harbour and river improvements, mainly at or near the Scottish coast. He also published authoritative articles in periodicals and encyclopedias. His bridges are substantial but also simple and elegant, qualities perhaps derived from the designs of John Smeaton, Thomas Telford and John Rennie. Stevenson's five-arch Hutcheson Bridge (1832; destr. 1868) in Glasgow was an outstanding specimen of the low-rise segmental arch, and it was his finest bridge. Stirling Bridge (1831), of similar size and type but with voussoirs radiating to its stringers, entailed the formation of well-planned new approaches that became part of the principal street layout of the town. Stevenson had had previous experience of urban planning in Edinburgh in 1814 when he was engineer for the Regent's Bridge and London Road approaches skirting Calton Hill.

Stevenson's proposals for using iron in bridges included his design for the Cramond suspension bridge (1820; unbuilt), north Edinburgh, in which a cast-iron framework incorporating the road rested on catenarian wrought-iron chains. Numerous light spans were later built on this basic principle. One of his most ambitious bridge projects (1828; unbuilt) was for a 14-arch cast-iron upper-deck roadway to be added to Newcastle upon Tyne old bridge and supported at the existing piers. This two-level idea was later taken up by John Dobson and Robert Stephenson (1803–59) in their high level bridge in Newcastle (1846–9).

#### WRITINGS

- 'Description of Bridges of Suspension', *Edinburgh Philos. J.*, v (1821), pp. 237–56  
*An Account of the Bell Rock Lighthouse* (Edinburgh, 1824); ed. A. F. Collins as *The Bell Rock Lighthouse* (Cambridge, 1931)

#### BIBLIOGRAPHY

- D. Stevenson: *Life of Robert Stevenson* (Edinburgh, 1878)  
R. L. Stevenson: *Records of a Family of Engineers* (London, 1912)  
D. A. Stevenson: *The World's Lighthouses before 1820* (Oxford, 1959)  
C. Mait: *A Star for Seamen* (London, 1978)  
E. Ruddock: *Arch Bridges and their Builders, 1735–1835* (Cambridge, 1979)  
A. W. Skempton: *British Civil Engineering, 1640–1840* (London, 1981)

ROLAND PAXTON