

Canals

Biggest problem of the early Industrial Revolution was **how to carry heavy, bulky (iron, coal) and fragile (pottery) goods**. Water had always been one route – rivers, coasts.

By 1750 about 1000 miles of river had been widened and deepened to make them navigable but they did not always go to the right places!

First modern canal in Britain: the **Bridgewater Canal built (1761) by James Brindley** to deliver the Duke of Bridgewater's **coal** from his mines in **Worsley to the growing industrial city of Manchester**. Later extended to Liverpool to carry cotton.

Advantages – **coal carried easily and more cheaply** (so more profit even when sold at less).

Difficulties:

- **leakage** (solved by using **puddled clay** to line the canal)
- **crossing the River Irwell** (solved by building the **Barton aqueduct**)
- **progress was slow**.

Later hundreds of miles of canal were built to link major rivers e.g. **Brindley's Grand Trunk linking the Trent and Mersey (1777)** which was supported by the great maker of pottery, **Wedgewood**.

Telford (also famous for roads) built canals in the Welsh borders area and in Scotland in the late 18th c and early 19th c. **His were wider and straighter than earlier ones.**

Engineering feats included **tunnels** (e.g. the Harecastle tunnel on the Grand Trunk canal), **bridges, cuttings, embankments, locks** and **aqueducts**, all **built by navvies** ('navigators').

Problems with canals:

- **expensive**, and at first **difficult**, to build
- **slow** (they never became popular as passenger transport)
- **never successful in agricultural areas**
- **each canal company built to a different size** (difficult to run 'through traffic')