

Barton Aqueduct - a world first

On 23 March 1759 the first Bridgewater Canal Act was passed - the Duke and Gilbert set the work in train. James Brindley was brought in to advise on aspects of the construction.

The canal was originally intended to join the river Irwell - with tolls payable to the Mersey & Irwell Navigation Company to carry goods into Manchester. Instead it was decided to build an aqueduct across the Irwell and continue into Manchester south of the river, avoiding the tolls. This innovative project was designed and carried out by Brindley.

Despite opposition from the owners of the Mersey and Irwell Navigation, a second Act of Parliament was passed in March 1760 to allow building of the aqueduct.

The Duke, Gilbert and Brindley did much canvassing to overcome local opposition. Brindley, it is said, gave a demonstration of the aqueduct to Parliament, by carving a model from a cheese and he also showed how lining by clay-puddling would prevent water leakage from the aqueduct.

The aqueduct was completed in July 1761. It was 200 yards long and 12 yards wide with three arches, the centre one having a span of 63 feet and it carried the canal at a height of 39 feet above the Irwell.



James Brindley with his surveying equipment

When the idea of a barge-carrying aqueduct was first made known, it was ridiculed by many. The well known saying "... and pigs might fly" is said to have been coined at this time - the full saying being "... and pigs might fly when waters meet in Market Street". But the waters **did** finally meet at Castlefield in the heart of Manchester. Thus the doubters were defeated.

On 17 July 1761 the Duke invited the Earl of Stamford and others to see the first boatload of coal crossing the aqueduct. The barrier was removed and water flowed into the aqueduct, rising gradually to the same level as the canal. A large boat carrying 50 tons of coal was then towed across by horse.

The Duke, Gilbert and Brindley quickly became national celebrities. The aqueduct was hailed as one of the new wonders of the world. It was a place to visit - royalty and others came to view the great engineering feat; among them King George III's brother-in-law, King Christian VII of Denmark.

Meanwhile work was proceeding apace to extend the canal through Trafford Park - open parkland at that time - and so onwards to Castlefield, where the coal could be unloaded and sold at a fraction of the price it cost after being moved by packhorse or cart.

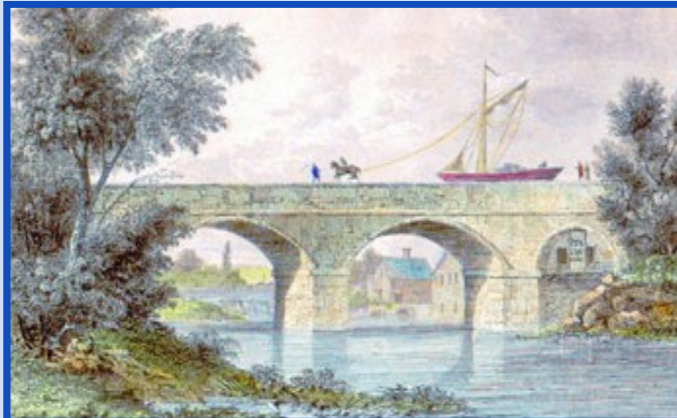


The Duke surveys his aqueduct

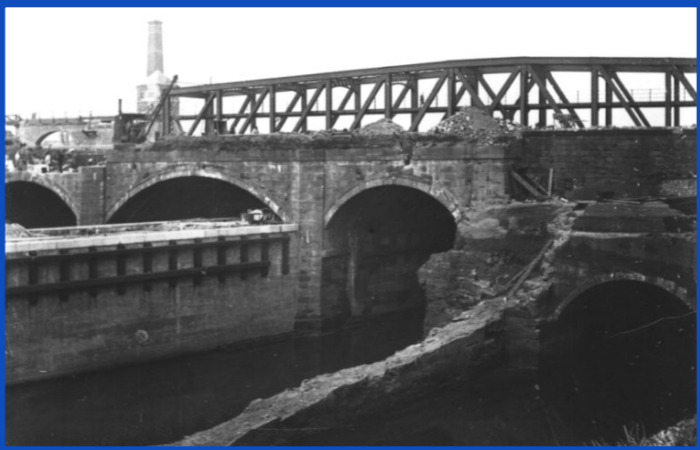
Engraving by H Cook, National Portrait Gallery



An early drawing of the aqueduct



Early watercolour of the aqueduct without cutwaters



When the Manchester Ship Canal was being built in the 1890s, the old stone aqueduct could not be adapted and so had to be demolished. Its construction was so robust that it took months to dismember and small sections of the original masonry aqueduct can be found by a keen observer. The picture, above, shows the steel swing bridge behind the partly demolished old aqueduct.

The new structure swings through 90° from its axis in the middle of the ship canal to allow passage for ships. The engraving, above right, shows the Duke proudly pointing to the aqueduct and to the Barton road bridge, which was also replaced by a swing bridge.



The picture above shows the approach from Worsley to the current Barton aqueduct. A small section of the old structure including a blind arch, can be seen on the right. The aqueduct is now used by the increasing numbers of pleasure craft. Since the traffic using the Ship Canal has declined, it is a only rarely that either the aqueduct or the road swing bridge at Barton have to operate. Being 'bridged' was once a common complaint in the area.



Puddling clay to repair the canal in 1893



Cutwaters were added to the stonework to minimise erosion