London's Early Water Supply

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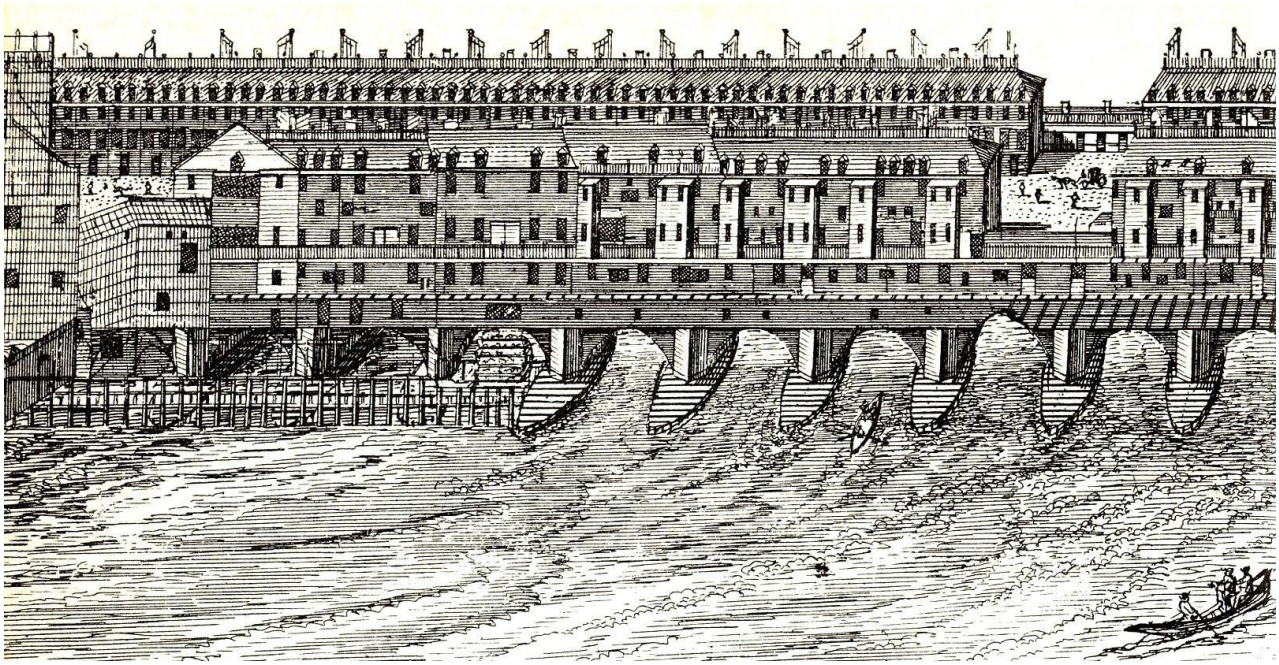

In the 16th century London's water supply was the tidal Thames, a few small polluted streams, and shallow wells.

In 1580 a Dutch engineer Peter Morrys (or Morrice) proposed to the Lord Mayor and Aldermen his scheme for raising Thames water, by a machine of his own invention, high enough to supply the upper parts of the City, and throw a jet of water over the steeple of St Magnus Church. In 1582 the City granted him a lease of 500 years at 10/- yearly to pump water from the Thames into the city by means of water wheels placed in the first arch of old London Bridge and driven by the tide. They supplied Thames water as far as Gracechurch Street. Two years later, the City granted him another arch on the same terms. He received large grants from the City to help him complete his system of hydraulic mechanisms. The lease from the City was extended as time went on to five arches and supplied the City for 240 years and the Borough (south of the river) for 50.

London had a fresh water supply by 1613, the New River. It was a water-course constructed by Sir Hugh Myddleton that was 38 miles long and brought fresh water from Hertford to 17th century London.

The bridge works continued in the Morrys family till 1701, when they were sold for £36,000 to Richard Soames, and a company was formed to develop the undertaking. The waterworks was eventually demolished in 1822, being taken over by the New River Company, to allow the construction of the New London Bridge.

More information about the pumps at London Bridge appears in R.R. Angerstein's *Illustrated Travel Diary 1753-1755.*

You could almost call this the diary of a Swedish industrial spy, for he travelled around England from Land's End to Newcastle recording all the industrial processes he came across and making sketches of them as well. They were translated by Torsen Berg and completed after his death by his son Peter and were recently published by the Science Museum.

There are descriptions of flour mills, drying kilns, wind and water mills, water wheels, and Tyne valley windmills, together with sketches. The subjects are as diverse as blast furnaces, hop growing, coal mines, cucumber picking, forges, salt and coal mines, with 460 items described.

This is his description of the water-pumping works in London:

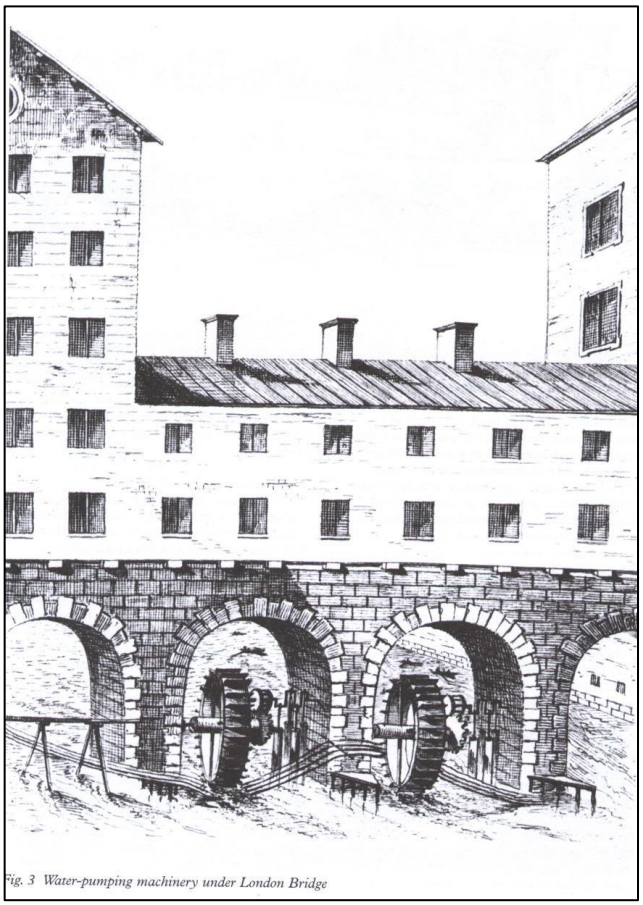

Fig. 3 Water-pumping machinery under London Bridge

"On 19 September I went to see the water-pumping works under London Bridge (*left*), which consisted of five large undershot water wheels, driven when the tide is going out and standing still when it is coming in. The pipes used for the cylinders, and to convey the water under pressure to the streets, are in some cases made of cast iron and in some cases of lead, but the teeth of the gear wheels and the staves of the lantern pinions were of cast iron."

This is a very early reference to the use of iron for the gear teeth of millwork. Only two of the five wheels are shown, each driving four pumps.

Angerstein's Diary is a must for everyone and is a book you will be unable to put down once you look into it.

Sources:

A Shadwell: *London Water Supply* (1899)
R.R. Angerstein: *Illustrated Travel Diary 1753-1755*