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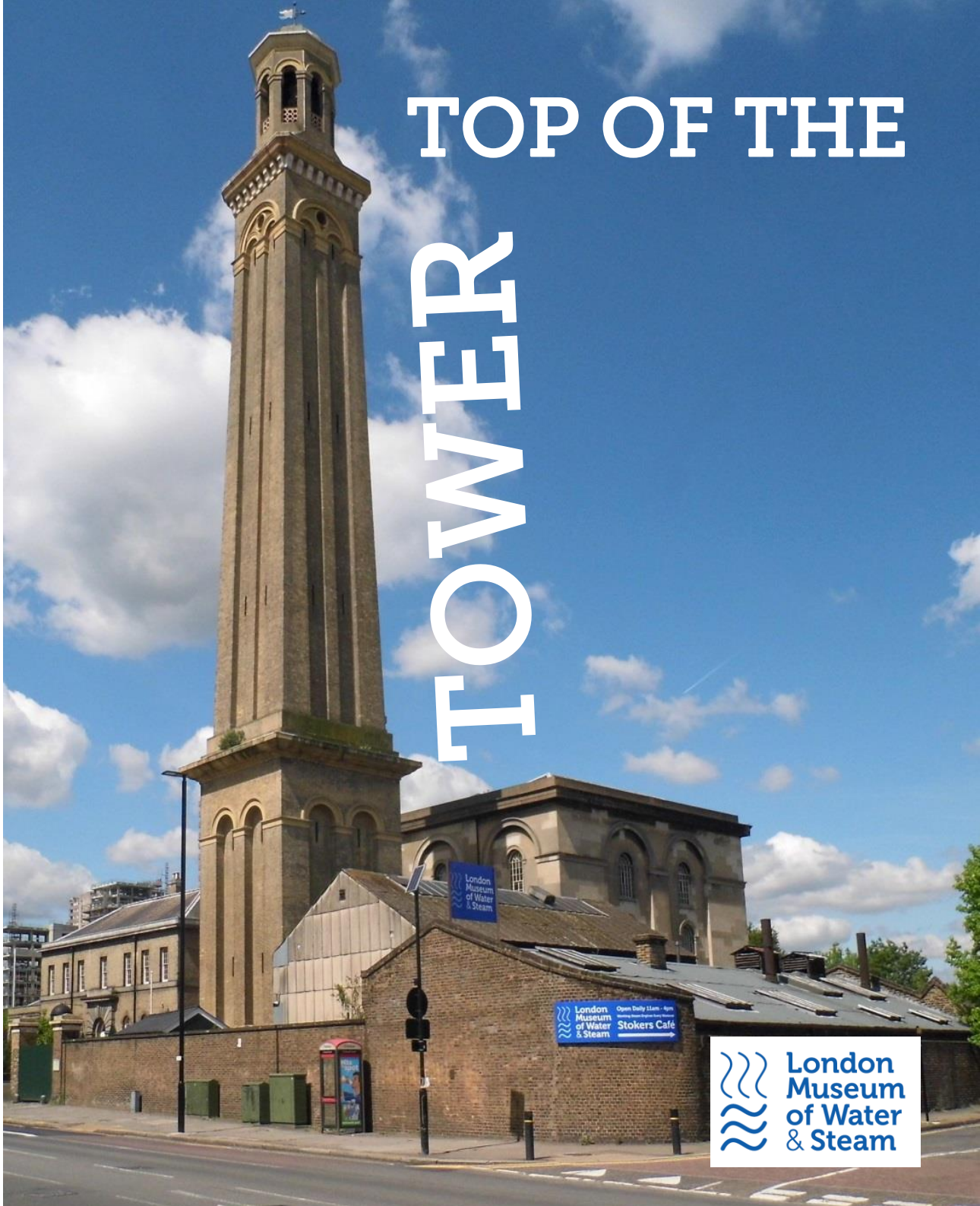
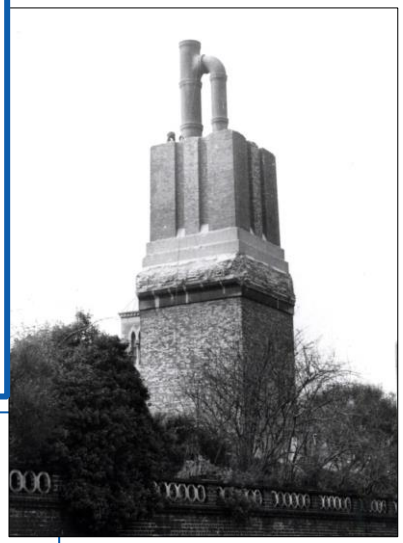


What is the Tower for?

The Tower created an even water pressure for customers. The massive pumping engines in the Waterworks produced pulses of water, coinciding with the power strokes of the beam engine. However, the mains needed a constant pressure within the pipes. The Tower contains two pairs of large diameter vertical standpipes through which water was pumped before being fed by gravity to the mains. These pipes acted as a "buffer" between the pulsating pressure of the engines and the mains. They also protected against a sudden loss of load, for example a burst water main, which could lead to catastrophic damage to the engine.

How does it work?

Inside the Tower is a pair of open-topped riser pipes. About thirty feet below the top is a junction that allows water to overflow into a smaller descender pipe. For the 90"/100" system, the riser pipe is 44 inches in diameter while the descender pipe is 33 inches. Each "pulse" of water from the beam engines rose high up the riser pipe, but only a constant amount was able to enter the smaller, descender pipe, thus smoothing out the flow. The water was delivered to a reservoir at Campden Hill, which tells you that the overflow junction is slightly higher than the reservoir!



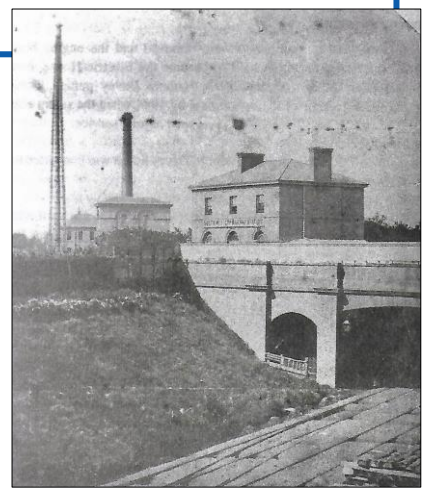
During the demolition of the Campden Hill Standpipe Tower in 1970, the riser and descender pipes are clearly seen.

How many towers were built?

The Tower we see today is the third to be built at the Waterworks and is the only one to have been enclosed with brick, a measure designed to protect the massive cast iron pipes from frost damage. The slits in the brickwork are believed to have been included to allow smoke to escape from small fires that were lit at the base to gently warm the pipes in severe weather.

The first standpipe on the site was fixed to the side of the chimney and both were located where the waterwheel now stands. It survived until 1846 when a new standpipe was built, roughly in the position of the current one, as part of major improvements suggested by Thomas Wicksteed. This second pipe was described by Dickens as "..an immensely tall thin column that shoots up into the air...and seems to require four smaller, thinner and not much shorter props to keep it upright." (*Household Words*, April 1850) These "props" were actually pipes taking water into the mains network.

Following a series of severe frosts during the winter of 1866, the pipes split and the tower was demolished, making way for the current structure.



Great engine house and "lattice" standpipe tower, c.1855.