

## Our station's architecture

The main engine house, now a protected Grade II listed building, was described in 'The Builder' in 1873 as "Italian of simple character".

The lower storey of Western is stone-faced while the upper is brick, finished with a stone cornice. The lower windows are square-headed, but the upper windows have curved surrounds. The convex French-style mansard roof is covered by copper scales and pierced by oval louvres.

The former boiler house (also Grade II listed) is located to the back of the engine house. Built in a rusticated style, the impressive detached chimney is 172 feet high and is currently used as a sewer vent.

Also on our site is the former superintendent's house, a four-bedroom detached home that reflects his status, and the auxiliary engine house, which has been altered over time.



The elegant chimney was built to let out the exhaust steam and smoke.

This is just one of our historic sites. To find out more about the others, visit [thameswater.co.uk/livewild](http://thameswater.co.uk/livewild)



# Western Pumping Station

Cleaning up the River Thames



## Western's function

Our Western Pumping Station, or 'Western' as it's also known, is a key part of London's wastewater drainage system. It was built over 150 years ago in Pimlico and was part of a radical overhaul by Joseph Bazalgette, Chief Engineer to the Metropolitan Board of Works.

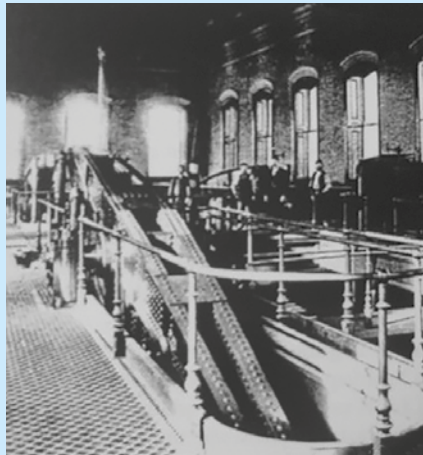
Before Western was built, London's sewage directly flowed into the Thames through a network of watercourses and sewers. This understandably caused serious problems. By the mid-19th century, the river had become a foul-smelling health hazard, causing thousands of deaths through waterborne diseases such as cholera, typhoid and dysentery.

Bazalgette planned for a new network of sewers to carry London's waste further

downstream to the tidal part of the Thames – the estuary. As part of this plan, Western was opened in 1875, costing £180,489 to build.

The location of our pumping station is very important, as Bazalgette's sewer is too high to pass under the nearby Grosvenor Canal. Western lifts the wastewater flowing through our pipes to around 18 feet, where gravity keeps the flow strong enough that the brick sewer chamber is self-cleaning.

We look after all the books that show the original drawings for Western. They only contain Bazalgette's signature as the man behind Western. But the architect for the main pump house was probably Charles Driver, who designed the great pump house at Abbey Mills in Newham.



Sir Joseph Bazalgette and one of the steam driven high level beams

## Western's engineering history

Between its completion in 1875 and the 1930s, Western was powered by four 90-horsepower beam engines operating eight pumps. Each engine could lift around one tonne of sewage a second. A fifth 120-horsepower engine, for occasional use, was housed in a separate building nearby.

## How Western works

When it rains over Hammersmith and Chelsea, the flow of wastewater in our low-level sewer begins to rise. We then turn an engine on, using compressed air and diesel fuel, so we can raise around three tonnes of sewage a second to the sewer downstream.

We start the other three engines in the same way, as the flow of water continues to rise. The top speed of our engines is 325 rpm, roughly 1/20th of the speed of a modern car engine.

If the sewer downstream from Western is unable to take the flow pumped through by our engines, we have to release the wastewater into the Thames. Once we've finished building our super sewer, the Thames Tideway Tunnel, we won't have to do this anymore – further improving the cleanliness of the river and protecting the environment.

From 1937 to the present day, our main source of power for Western has been four 600-horsepower diesel engines, which drive our pumps below through vertical shafts. We also have three pumps driven by electric motors to lift flows during dry weather.

