



Broomy Hill Water Tower

June 2023

Researched by: Richard Curtis (Trustee)

Hereford's 'Italianate' Water Tower

Until about 30 years ago members of the public could occasionally climb to the top of the Grade II Listed Water Tower to see wonderful views across Hereford city. Welsh Water open days stopped, however, when the condition of the internal stairway became unsafe to use.

Since then, visitors to the Waterworks Museum have been unable to relate to the Water Tower hidden behind the trees at the top of the hill, and the important role it played in extending piped water to the higher parts of Hereford in the 1880's.

Broomy Hill Water Tower Hereford Waterworks

Built in 1883 the Water Tower was needed to ensure a reliable supply of water to the higher and expanding districts of Hereford, which had grown rapidly since 1856 when the waterworks was opened.

Hereford Cathedral, the tower was built tall enough to supply water to the higher areas of the City by gravity and its high pressure supply ensured a good flow of water for fire-fighting purposes.

Treated water was lifted to the tank by pumps in the basement of the Tower. As early as 1911 an electric pump was in use, which worked automatically when the water in the tank fell below a set level.

The Tower stands 112ft (34m) tall and is built in Italianate style. It has walls that are 2m thick at the base and about 1m at the top under a water tank which held 45,000 gallons (200,000 litres) of water. Higher than

in World War 2 the Tower was used as an observation post. Its air raid sirens were only removed nearly 50 years later. Broomy Hill water tower is now a Grade II Listed Building.

At the top of the Tower was a platform accessed by a spiral iron staircase that went through the water tank encased in an iron cylinder. From here the public once had a magnificent view across the City.

The floor of the water tank was 177ft (54m) above the summer level of the River Wye in 1882. This compared with the top of Aylestone Hill at 122ft (37m) and the highest point of Whitecross at 104ft (32m).

This report developed with support from the Friends of Herefordshire Museums and Arts

The Museum looked to address this in 2021, with the support of a grant from the Friends of Herefordshire Museums and Arts, by creating a new display in the Visitor Centre. This sits alongside and provides additional context for the model of the Broomy Hill Water Tower, which was built in 2000 by former Trustee and Honorary Treasurer, Derek Duffett.

In 2020, we invited members of the public to submit their memories and photos of visits to the top of the Water Tower and some of these are reproduced on page 4 of this Information Sheet.

The architect who co-designed the Water Tower, GC Haddon, was born in Crick, a district of Rugby, and early in his career he worked with the architect of Rugby Corporation. In 1852, pictures of Rugby's new water tower, town hall and market appeared in the Illustrated London News. All were Italianate in their design influence.

The building of the Water Tower was made more complicated after the death in October 1881 of City Surveyor, George Cole, when his successor, John Parker, revised the original specification. Page 2 describes the changes he made that led to a series of contractual disputes which delayed completion of the project.

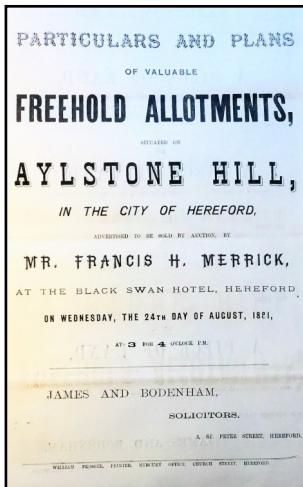
Facts about the Water Tower

- It stands 112ft (34m) high
- Its walls are 2m thick at the base and about 1m under the water tank
- To reach the viewing platform visitors used to climb a spiral iron staircase that went through the water tank
- The water tank is 35ft x 20ft and holds 45,000 gallons (which today would supply Hereford for less than 5 minutes)



Nowadays, members of the public can only see Broomy Hill Water Tower from a distance with the best views being from the playing field at Tower Road (above) or the fields adjacent to Hereford Cemetery (right).





Sale of allotments on Aylestone Hill (August 1881)

The original scheme (and why it was needed)

By the late 1870's, when the City Council first discussed the need for additional capacity at the waterworks, Aylestone Hill was already a popular upper-middle class residential area, with water supplied from private wells. An 1876 Directory lists 33 private residents with an address in Aylestone Hill. Other sites had also been ear marked for development.

The scheme chosen to deliver piped water to Aylestone Hill (and other higher parts of the City) was drawn up by City

Surveyor, George Cole, using data from Timothy Curley's 1855 topographical survey of Hereford.

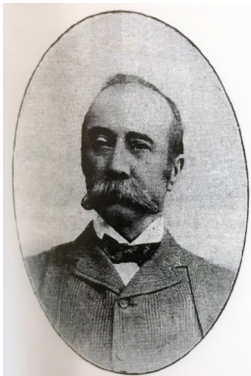
Cole's proposals were reviewed and endorsed twice as meeting the schemes objectives. First, by the County Surveyor, Mr Chiake, and then by Timothy Curley in meetings with the City Council and, later, with the government inspectors.

The Italianate Water Tower was designed by City architect, George Cowley Haddon.

TIMELINE

- Mar 1880:** G Cole design adopted
- Jul 1880:** T Curley endorsed design at Hereford Council
- Sept 1880:** Government loan application for £5000
- Oct 1880:** Foundation stone laid
- Jan 1881:** Public inquiry
- Jul 1881:** Government inspectors meet Curley
- Aug 1881:** Government loan sanctioned
- Oct 1881:** Death of G Cole
- Nov 1881:** J Parker appointed
- May 1882:** Death of T Curley

How Parker's appointment changed things



John Parker, Hereford City Surveyor & Engineer between 1881 and 1919

The appointment of John Parker as City Surveyor & Engineer had an immediate impact. He argued that Curley's topographical survey had not been updated for nearly 25 years and he was commissioned to arrange its update.

If put to tender this project would have cost Hereford Council around £1,000, but Parker proposed that the work could be done under

his supervision by his assistant (his son) and a pupil for 'such sum as the Corporation should deem fit to give two young men for their services'.

From the new survey Parker made two key changes to the technical specification of the Water Tower scheme: that the pumping lift be increased from 3,000 to 10,000 gallons/hour, and that the

storage capacity of the high pressure tank be increased from 30,000 to 45,000 gallons.

The Mayor of Hereford, who was not on the Waterworks Committee, was concerned at the scale of proposed change and initiated a review of the scheme by the eminent civil engineer James Mansergh, who in July 1882 endorsed Parker's proposals.

The contractual disputes which delayed completion



The first dispute arose in January 1882 when Parker ordered that bath stone bonders be inserted in line with the contract. The builders (Hickson & Warwick) disputed this claiming it would cost an extra £300. This went to arbitration and was resolved in the City's favour, which was important as it also enabled the proposed larger water tank to be installed.

In April 1882, a contract was awarded to Isca Foundry (Newport) to build the water tank within 3 months. But it took over 11 months to fully deliver.

When eventually delivered to site in October 1882, 23 plates were rejected as they did not have the specified coating. After 4 weeks of exchange of legal letters, all published in the Hereford

Times, an alternative coating was agreed in return for an extended warranty.

There was also a delay in the same contractor laying the water mains from the pumping station to the Water Tower.

The supply from the high pressure tank was finally completed for testing on 10 March 1883.

Improvements in firefighting

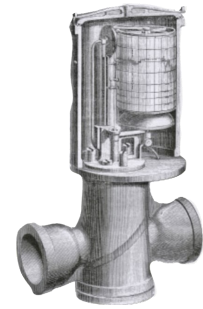
The 850 residents of Aylestone Hill and Eign Hill were not the only beneficiaries of the new high pressure supply.

The first test of the water supply from the high pressure tank involved attaching a fire hose to a hydrant on Aylestone Hill to see if the goal of improving water supply for firefighting had been achieved. This test saw a jet of water fired over the roofs of The Elms, the home of the retired editor of the Hereford Times, Charles Anthony.

The Water Tower improved firefighting across the whole of Hereford after John Parker divided the City into a number of water districts. He did this by the introduction in the mains of additional valves, to which the high pressure supply could connect in the case of a fire. This 'district' approach to managing water supply had been seen in operation in Liverpool, where the water engineer, George Deacon, had also developed a meter to detect water wastage (leaks). The Deacon Meter was also

tested and adopted in Hereford.

At the same time as the Water Tower was built, Hereford became the first city to combine the role of Chief Fire Brigade Officer with that of Chief of Police. Frank Richardson, who was appointed in November 1882, had soon recruited 7 dedicated firemen who all lived, as did he, next to the fire station in De Lacy Street. Many innovations in firefighting in Hereford followed before Richardson retired in December 1919.



Deacon Meter (The Sanitary World, 12 July 1884)



Frank Richardson in dress uniform (1917)

How water was raised to the high pressure tank

In 1882 the existing beam engines were not suitable for the lift needed to raise water to the tank, so a high pressure pump by Joseph Evans & Co was installed in a new annexe at the east end of the pumping station (which is now the Museum office). This pump has long since been removed.

When the Worth Mackenzie Triple Expansion Engine was installed in 1895 this

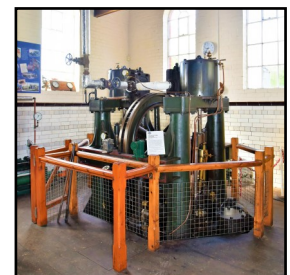
served two purposes: its three pumping rams lifted raw water from the River Wye via the well and it lifted clean water to the top of the Water Tower with two high pressure pumps.

By 1906, however, demand had increased and the engine could not cope with this dual use. This was when the twin cylinder Worth Mackenzie steam engine was installed, which

was dedicated to lifting clean water to the Water Tower. Both Worth Mackenzie engines were powered by the Lancashire Boiler that remains in situ.

This position lasted only a few years as in 1911 an auxiliary electric pump was installed in the basement of the tower to pump water from the pure water tanks of the then new filter beds to the high pressure tank.

This pump, also long since removed, was made by Messrs. Mather & Platt at a fitted cost of £108 13s 4d.



The 1906 steam engine

The people who designed and built the Water Tower

George Cole who prepared the Water Tower scheme was Hereford's City Surveyor from June 1859 until his death in October 1881. This period spanned the development of much of Hereford waterworks under the remit of Timothy Curley, with whom press cuttings show Cole had a sometimes difficult relationship.

George Cowley Haddon was the architect who designed the water tower, which was one of his final projects. Many of his projects were influenced by Italianate design. He was declared bankrupt in February 1882 and moved to Great Malvern that summer. He died three years later in Powick Psychiatric Hospital on 23 August 1885, aged just 44.

John Parker succeeded George Cole as City Surveyor in November 1882, a post he held until he resigned in February 1919. He continued as Hereford's City Engineer until July 1919 when NM Shimmin was appointed. Parker's story is told in a separate information sheet.

Further information is available on the Museum website about all the stories in this information sheet:

www.waterworksmuseum.org.uk/discover/water-tower

Later uses of Broomy Hill Water Tower

In World War 2

JUNE 1941	
THURSDAY (05.00)	
11.00 - 12.00	W. Bennett 11.00 to 12.00
12.00 - 1.00	W. Bennett 12.00 to 1.00
1.00 - 2.00	W. Bennett 1.00 to 2.00
2.00 - 3.00	W. Bennett 2.00 to 3.00
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4.00 - 5.00	W. Bennett 4.00 to 5.00
5.00 - 6.00	W. Bennett 5.00 to 6.00
6.00 - 7.00	W. Bennett 6.00 to 7.00
7.00 - 8.00	W. Bennett 7.00 to 8.00
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FRIDAY (06.00)	
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11.00 - 12.00	W. Bennett 11.00 to 12.00

This entry shows a red alert occurred at 12.50 on Thurs 5 May 1941. It also records (on the same day) 'heavy gunfire looking to left of Malvern'.

The Museum archive holds the Broomy Hill treatment works diary for 1941 which records the use of the Water Tower as a WW2 observation post.

It records periods of duty, observations, including fire calls and air raid codes:

‘yellow’ was precautionary - be on alert

‘purple’ same as yellow, but in hours of darkness - lights to be extinguished

‘red’ meant a direct threat of enemy action - air raid warning to be sounded

‘white’ meant risk had passed.

The air raid sirens were only taken off the tower in about 1990.

Communications Tower



This photograph was taken in about 2010.

Before technology moved on, in the latter part of the 20th century the Water Tower was used as an aerial carrier in the chain of Welsh Water’s two way radio system, which covered the whole of Wales.

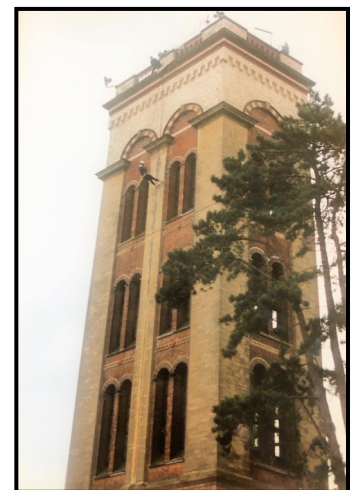
In the 21st century the use of the tower for commercial communication aerials has been contentious. A planning application was approved, however, in September 2001 for antennae for the Orange network to be placed on the top of the tower, but this arrangement was not renewed when condition of the tower stairwell made access unsafe.

Public memories of visiting the Water Tower

These are three of the responses from members of the public to our request in 2020 for them to submit their memories and photos of visits to the top of the Water Tower. Further responses are detailed on the Museum website.



Amanda Preece submitted this photo of her children and niece and nephew, who may have been among the last visitors to the Water Tower. They visited in 1996 as part of a 6th birthday present for her son Tom (2nd left in the photo). “We were allowed up the tower and the children waved to their grandma who lived in Broomy Hill. She was in her garden waving a red towel. It made my sons birthday, the best present he could have had.”



Tracey Jones sent us this photo of her abseiling from the top of the Water Tower in 1996 for charity. She said: ‘I had severe jelly legs upon reaching the ground!’.

Michael Latchem climbed the Water Tower in the mid-1990’s when acting as an architect on a scheme for Welsh Water. “I well remember climbing endlessly up the access ladder through the "black tube," through the then empty tanks which filled the brick outer walls of the tower, and being impressed by the panoramic views - shame I didn't carry a camera!”

“I’m still impressed with the skill, attention to detail and choice of materials that our forebears put into what is just, after all, a brick box to contain a water tank.”



Michael Latchem also sent us these images of the Water Tower