

Background Information on Beacon Hill Reservoir Granite Tablets

General

An important piece of water supply history was recently rediscovered and permanently relocated to the Metropolitan Waterworks Museum grounds. Inscribed granite plaques were installed on each end of the Derne Street side of the Beacon Hill Reservoir and they noted the important persons and dates associated with the construction of the reservoir. These plaques are the last remnants of the facility which was dismantled in the 1880's to make way for the construction of the State House Annex.



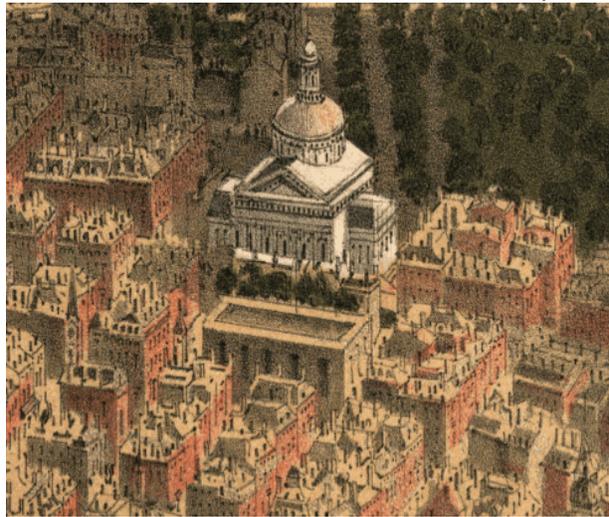
Gleason's Pictorial Image 1852

Description of the Beacon Hill Reservoir

The granite block reservoir structure occupied a site on the top of Beacon Hill bounded by Derne Street, Hancock Street, Temple Street, and abutting residential lots along Mount Vernon Street. The appearance was once noted by architect Charles Bulfinch to be the most attractive building in Boston.



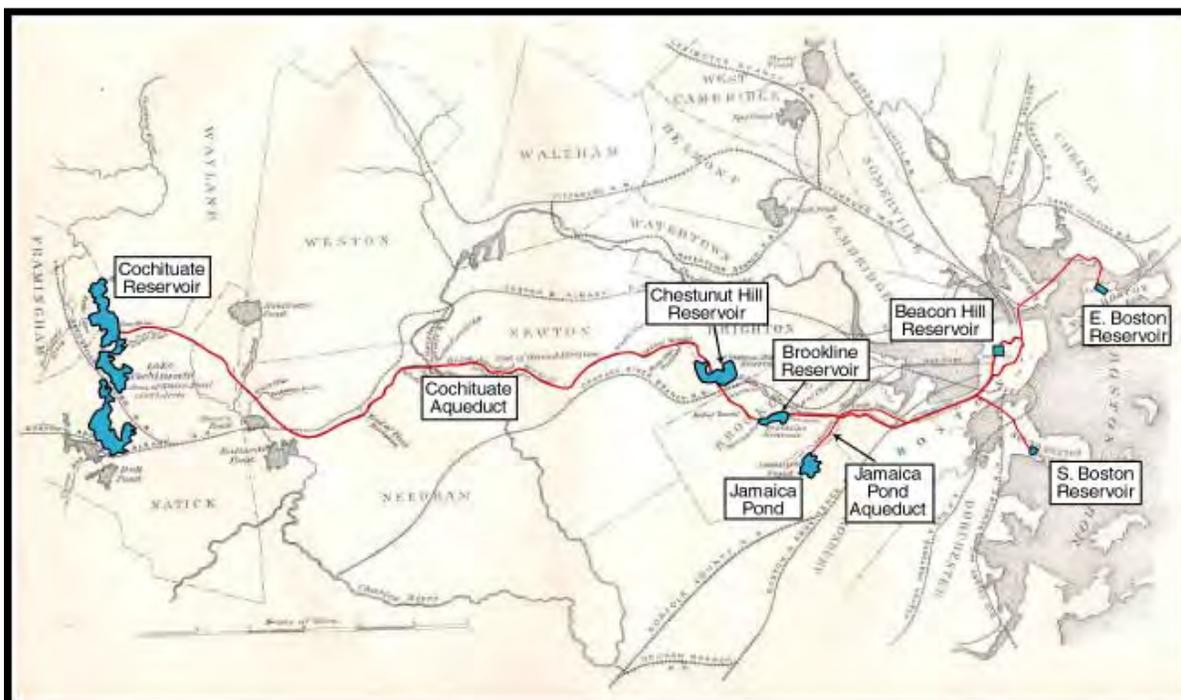
Beacon Hill area in 1852



Beacon Hill 1877 "Bird's Eye View" map

The Need for the Beacon Hill Reservoir in the Lake Cochituate Works

The planned water system was intended to deliver flow by gravity from Lake Cochituate through a cascading series of distribution reservoirs that would provide water for fires and for service disruptions. The Beacon Hill area provided a high enough elevation to protect the center of the city and to push water northward to eventually reach East Boston.



Plan of the 1848 Lake Cochituate Water System

Construction of the Beacon Hill Reservoir

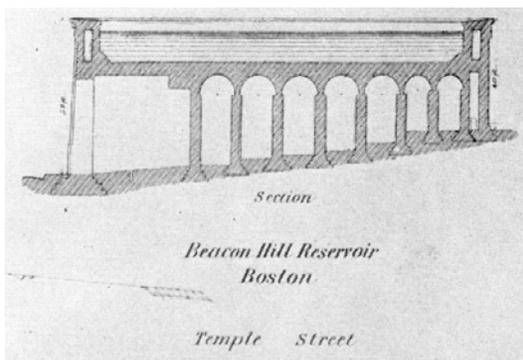
Preparation of the site began in 1846. First, the site needed to be graded down to the correct elevation since it needed to receive water from Brookline Reservoir and provide the pressure needed to drive water to East Boston. This meant that the top of Beacon Hill, where the beacon had long been standing, needed to be lowered to accommodate the reservoir. The soil was dug by hand and hauled by cart down to fill the old Mill Dam in the Bulfinch Triangle area.



Removing soil from Beacon Hill to provide the proper grade to build the Beacon Hill Reservoir

The construction of the reservoir structure began in November 20, 1847 with the laying of a cornerstone. The ceremony included presentations by Mayor Josiah Quincy Jr, Rev. N. Adams, and a musical band; and government officials, contractors, and guests in attendance. Two years later the building was complete. On the morning of November 23, 1849, "the water was let into it through the 30-inch pipe at half past nine o'clock ... and it was filled in 18½ hours." The 2.7 million gallon capacity reservoir "is built of the most massive description of stone masonry, and is the most costly distributing reservoir owned by the city."

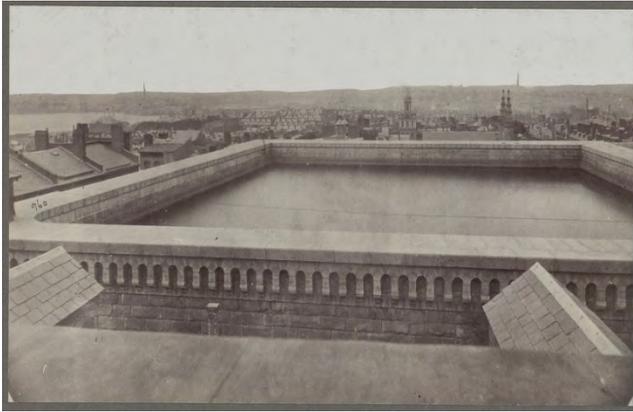
The reservoir design was unique in its approach. The design of the structure needed to minimize its footprint and reflect well on its surroundings in the prestigious location. In lieu of earthen bermed walls, as was the convention in most period distribution reservoirs, the design chose to create a watertight tank within a masonry structure. This made the structure the first elevated storage tank constructed in New England. Sheet lead was used to make the reservoir watertight.



Cross-sectional Profile



Interior looking back at Derne Street



Various views of the Completed Beacon Hill Reservoir

Significance of the Boston's 1848 Lake Cochituate Works

The importance of a safe water supply to the public health of Boston's citizens was indisputable. It allowed the retirement of hundreds of severely polluted Boston wells to mitigate waterborne disease. The project was completed at a time when waves of cholera and typhoid epidemics were sweeping through other cities across the country. The public strongly supported the project as evidenced by the size and scale of the October 25, 1848 Water Celebration on the Boston Common. Having this dedication on the 165th anniversary of this event is fitting.



October 25, 1848 Celebration of the Introduction of Pure Water from Lake Cochituate

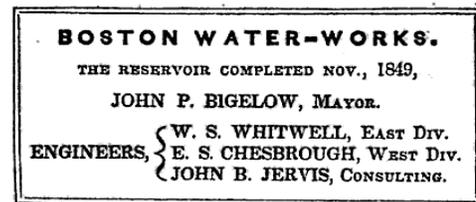
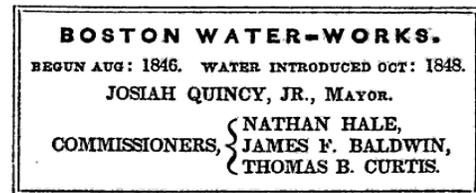
The Lake Cochituate system was the first truly municipal water system in New England and allowed the benefits of clean water and improved fire protection to be extended into poor and rich neighborhoods alike. Prior water supplies such as the Jamaica Pond Aqueduct Company were done by entrepreneurs for profit, which restricted the sanitary benefits to those who could afford the water.

The project was Boston's biggest capital investment after incorporation as a city in 1822 and it was a source of civic pride. The decision to build the more costly solution was controversial but it was important to Boston's economy to remove the impediments to growth of manufacturing and worker well being. Having a large and well constructed water supply established Boston as a world class city in the same manner that New York's Croton Reservoir source and Philadelphia's Fairmount source had done.

Having affirmed Boston’s commitment to high quality water, the project also established the precedent for seeking better protected, high quality western sources, regardless of the higher costs. This forward thinking approach was followed again by the MA Board of Health and the Metropolitan Water District as the system grew to the lasting benefit of the millions of people that have been served in the 165 years since.

Significance of the Names listed on the Beacon Hill Reservoir Plaques

The most notable name on the plaques is Josiah Quincy Jr., the mayor during the construction of the Lake Cochituate works. He was known more for his role in education but he was destined to complete the vision of his father, Josiah Quincy III, the first Mayor of Boston. Josiah Quincy III was the strongest advocate for developing a proper municipal water supply for Boston during his term but the cost and debate over alternatives delayed the effort of over two decades. He was also best known for development of Quincy Market and for being President of Harvard University. The Quincy family clearly had the most direct influence on Boston’s water supply of any other politicians of the era.



Names on the Plaques



Josiah Quincy, Jr.

Josiah Quincy Jr. Mayor of Boston 1845-49



Josiah Quincy III Mayor of Boston 1823-28

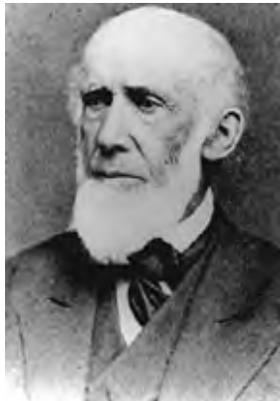
The engineers listed on plaques are also significant figures. The Water Commissioners named on the plaque include James Fowle Baldwin, one of the sons of Loammi Baldwin Sr, the “Father of American Civil Engineering” and chief engineer of the Middlesex Canal. James Baldwin’s brother, Loammi Baldwin Jr, prepared the studies and recommended the Lake Cochituate source. After Loammi Baldwin Jr.’s death in 1838, James F. Baldwin became one of the key advocates



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to continue with the Lake Cochituate solution and was an important engineer in his own right. He was best known for constructing the Boston Navy Yard and many other regional projects.

John Jervis was engaged to be the designer of the Lake Cochituate works after the plan was adopted. He had been a significant figure on the Erie Canal project and had just completed New York's Croton Reservoir and Aqueduct prior to taking on the Lake Cochituate design. He chose the final aqueduct routes and the hydraulic details of the delivery system.



John Jervis



Ellis Chesbrough



James F. Baldwin



Loammi Baldwin Jr.

Ellis Chesbrough directed the construction of the Lake Cochituate Aqueduct. After completion of the Lake Cochituate project, he took on construction of Chicago's water and sewer systems, including the reversal of the Chicago River to carry Chicago's waste away from the Lake Michigan water intake that he designed. He later returned to Boston to work on a number of large sewerage projects.

William Whitwell managed much of the construction of the eastern end of the Lake Cochituate works and remained with the Boston Water Works for much of his career with some occasional design consulting for local waterworks around eastern Massachusetts.

The End of the Beacon Hill Reservoir

By 1870, Boston Water Works had constructed its first pumping station and standpipe to deliver water to high ground elevations around the city. The Beacon Hill area had always had marginal water pressure when fed from the 1848 gravity distribution reservoirs so it was decided that the Beacon Hill District would be fed from the new Elmwood Street Pumping Station in Roxbury and its companion, the Roxbury Standpipe. The Beacon Hill Reservoir was then relegated to being an emergency source in the 1870's for use only in case of fire or accident to the pumping-mains. In 1883, Boston Water Works sold the



1870 Roxbury Standpipe

property to the state of Massachusetts and the reservoir was demolished to build the addition at the rear of the State House.

Discovery of the Beacon Hill Reservoir Tablets

The Beacon Hill Reservoir granite plaques had likely been stored at Boston’s Calf Pasture Pump Station site long ago, possibly after the 1883 demolition of the reservoir. After pumping operations ended at the site, Boston Water & Sewer Commission had been using the site to manage excavated materials. The plaques were partially covered and unrecognizable until BWSC began to clean out the site before a planned disposition. BWSC staff collaborated with MWRA staff to identify the plaques and work out a means to preserve them. The sheer weight of the plaques (about 15 tons each) required MWRA’s heavy equipment to get the plaques out of the site to a temporary storage site at MWRA’s Gillis Pump Station.



The northern end of the State House Annex extends to Derne St. and is supported by the old reservoir foundation



Tablets uncovered at Calf Pasture BWSC yard



MWRA crew moving tablets out of Calf Pasture

Transfer and Placement at Metropolitan Waterworks Museum

All parties to the preservation of the Beacon Hill Reservoir plaques agreed that permanent installation at a publicly accessible site would be best. To that end, the Chestnut Hill Metropolitan Waterworks Museum provided an appropriate setting for this goal.

Museum principals pursued and secured approval of this installation from the site’s condominium owners and the various historic preservation agencies that govern allowable changes at such a significant historic facility.



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MWRA crews then transported and placed the plaques in the chosen location in front of the museum entrance.

The preservation of these important pieces of Boston's water supply history resulted from the collaborative effort of many people from the Boston Water & Sewer Commission, the Massachusetts Water Resources Authority and the Metropolitan Waterworks Museum. Everyone involved is commended for this successful effort.



Placing the plaques