Landmarks Preservation Commission
November 10, 1970, Number 1
LP-0639

HIGH BRIDGE, AQUEDUCT AND PEDESTRIAN WALK, Harlem River at West 170th Street, Borough of The Bronx, to High Bridge Park, Borough of Manhattan. Built 1838-1848; Engineer John B. Jervis.

Landmark Site: Borough of The Bronx, Tax Map Block 2533, Lot 22 and Borough of Manhattan, Tax Map Block 2106, Lot 1.

On February 3, 1970, the Landmarks Preservation Commission held a public hearing on the proposed designation as a Landmark of the High Bridge, Aqueduct and Pedestrian Walk and the proposed designation of the related Landmark Site. (Item No. 2). The hearing had been duly advertised in accordance with the provisions of law. The representative of Community Board No. 12 spoke in favor of designation. There were no speakers in opposition to designation.

DESCRIPTION AND ANALYSIS

An engineering triumph, unique in this country in its own time, High Bridge stands today "magnificent and lofty", as it was described shortly after its completion in 1848. As the most readily visible section of the original Croton Aqueduct, designed in the manner of a Roman aqueduct, it is a monument to the water system which brought to New York its first adequate public water supply.

High Bridge is best described in a Report of the Croton Water Commissioners outlining its specifications shortly before it was built:

> "The width of the river at this station is 620 feet; and the length of the bridge is 1420 feet. It is 18 feet in width, inside of the parapet walls and 27 feet from the outer edge of the coping. There will be 16 piers as supporters to the bridge; 6 in the river and 10 on the land.
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> The piers in the river are to be 20 x 40 feet at base, and about 84 feet in height to the spring of the arch, diminishing in their dimensions as they rise in height. The arches will have a span of 80 feet. The piers on the land will be proportionably less in size, their height will vary in accordance with the ascending ground, and the span of these arches will be reduced to 50 feet each.
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> The total elevation of the bridge, from the base, at the bottom of the river, to the top of the parapets, will be about 138 feet. The piers are to be built of large stone well hammered, and laid in courses of uniform thickness and dressed to a joint of a quarter of an inch."

For over three-quarters of a century the bridge looked just this way. Then in 1923, the Navy Engineers replaced the central piers in the Harlem River by the steel arch we see today in order to increase the navigability of the river.

History

New York originally depended on private wells, water carts, rain barrels and private cisterns for its water supply. These sources proved inadequate, both in quality and quantity, to meet the needs of the growing population after the Revolutionary War. A group of investors, under the leadership of Aaron Burr, then organized the Manhattan Water Company which installed a piped distribution system from a spring-fed reservoir at Reade and Centre Streets. But, by the turn of the century, this too had become inadequate and dozens of proposals were made for supplying New York with an adequate water supply. Some suggested further use of wells on Manhattan and some suggested using a source in Westchester County.

In November 1832, Colonel DeWitt Clinton, of the United States Army Corps of Engineers, recommended that water be carried from the Croton River in upper Westchester in an open canal and across the Harlem River on an arch 138 feet high and 1,000 feet long.

In 1833 the State Legislature established a temporary Croton Water Commission which appointed David Bates Douglass, a practicing civil engineer, to make surveys and to draw up plans. Among his recommendations was "that the crossing at the Harlem River is proposed to be effected by means of an Aqueduct Bridge 1,188 feet long consisting of nine plain semicircular arches..." The height from water line to water line was to be 126 feet.

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A permanent Commission, authorized to issue bonds for $2,500,000, was established in 1834. It ordered further surveys to be made, one by Douglass and one by John Martineau. Douglass again recommended the high bridge; but Martineau recommended an inverted syphon resting on a low bridge and an embankment that would have blocked part of the river. The Commissioners favored the latter suggestion, primarily because the cost was considerably less. It was included in the plan voted upon by the citizens of New York in 1835, authorizing the Croton Aqueduct.

The Water Commissioners replaced Douglass, late in 1836, with the appointment of John B. Jervis as Chief Engineer. Unlike his predecessor Jervis had no formal training, and had "served his apprenticeship" on the Erie Canal. The Commissioners asked him to draw up the estimates for the two methods of crossing the Harlem River. The cost for the high bridge came to $935,745 and that for the low bridge to $426,027. The Commissioners and their Chief Engineer were strongly in favor of the low bridge, although they admitted that: "so far as the architectural display is involved that the high bridge has the preference."

Opposition to the low bridge mounted, and the Board of Aldermen recommended a high bridge in 1838. Applying to the United States Circuit Court was discussed with the intent of restraining any construction which would impede or obstruct navigation. Actually, at this time the river was not navigable for large boats, as it was blocked by Macomb's Dam, a mile below the Aqueduct crossing, and by the mills at Kingsbridge. The Commission stood firm, but said that it would change the plan if overruled by the Common Council. The Council did not act so the contract was let in July, 1838 and work was begun on the low bridge.

The whole question was finally settled in May 1839, by the State Legislature which gave the Aqueduct Commission the alternatives of building either a tunnel under the river or an Aqueduct with arches and piers. The arches in the river were to be 100 feet above the highwater mark and to have 80 foot spans. It was at this time, that the bridge began to be called the "High Bridge" in various reports, although the official name was still the Harlem River Bridge. Jervis completed his plans according to the requirements of the Legislature, and contracts were let in August 1839, to a group of contractors who had worked on the Aqueduct. Thus, the design for the High Bridge, which reflects the function of the structure, had been initiated by Clinton, developed by Douglass, modified by the Legislature and finally drawn up by Jervis.

The engineers soon ran into difficulty in laying the foundations for the piers. Once it was known that the bridge could not be completed on schedule by 1842, pipes were laid across cofferdams as an interim measure and a temporary means of carrying the water across the river. Final construction proceeded at a leisurely pace and High Bridge was not completed until 1848 at a cost of $963,427.80.

By 1850, it was apparent that the two 36" diameter mains on High Bridge were inadequate to keep the Reservoir at 42nd Street up to the desired capacity. It was not until 1860 that the Common Council appropriated the funds to install a 90½" diameter pipe above the other two. The side walls were then raised six feet and were connected by a brick arch to accommodate the new larger pipe.

Thus an engineering triumph was finally achieved with the construction of this great aqueduct, and an adequate supply of pure croton water was brought to New York City to insure the health, safety and comfort of its residents.

FINDINGS AND DESIGNATIONS

On the basis of a careful consideration of the history, the architecture and other features of this building, the Landmarks Preservation Commission finds that High Bridge, Aqueduct and Pedestrian Walk has a special character, special historical and aesthetic interest and value as part of the development, heritage and cultural characteristics of New York City.

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The Commission further finds that, among its important qualities, High Bridge is a triumph of 19th century engineering skill, that it assured an ample supply of pure Croton water to the City and that, although subsequently modified by a wide central span, still retains much of its original character of a Roman aqueduct and is an exceptionally handsome feature of the Harlem River opposite High Bridge Park.

Accordingly, pursuant to the provisions of Chapter 63 of the Charter of the City of New York and Chapter 8-A of the Administrative Code of the City of New York, the Landmarks Preservation Commission designates as a Landmark, High Bridge, Aqueduct and Pedestrian Walk, Harlem River at West 170th Street, Borough of The Bronx to High Bridge Park, Borough of Manhattan and designates, as its Landmark Site, Tax Map Block 2533, Lot 22, Borough of The Bronx, and Tax Map Block 2106, Lot 1, Borough of Manhattan.