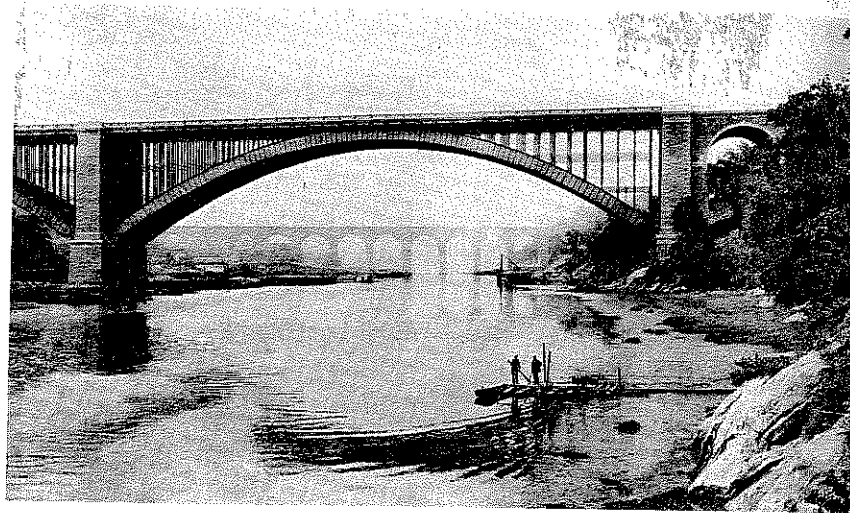


Icons and Engineers

The city of New York has 2,098 bridges, but just one, crossing from City Hall Park in lower Manhattan to Brooklyn Heights, is "the Great Bridge," the famous Brooklyn Bridge. No other structure has been so often painted, etched, lithographed, photographed, and written about.

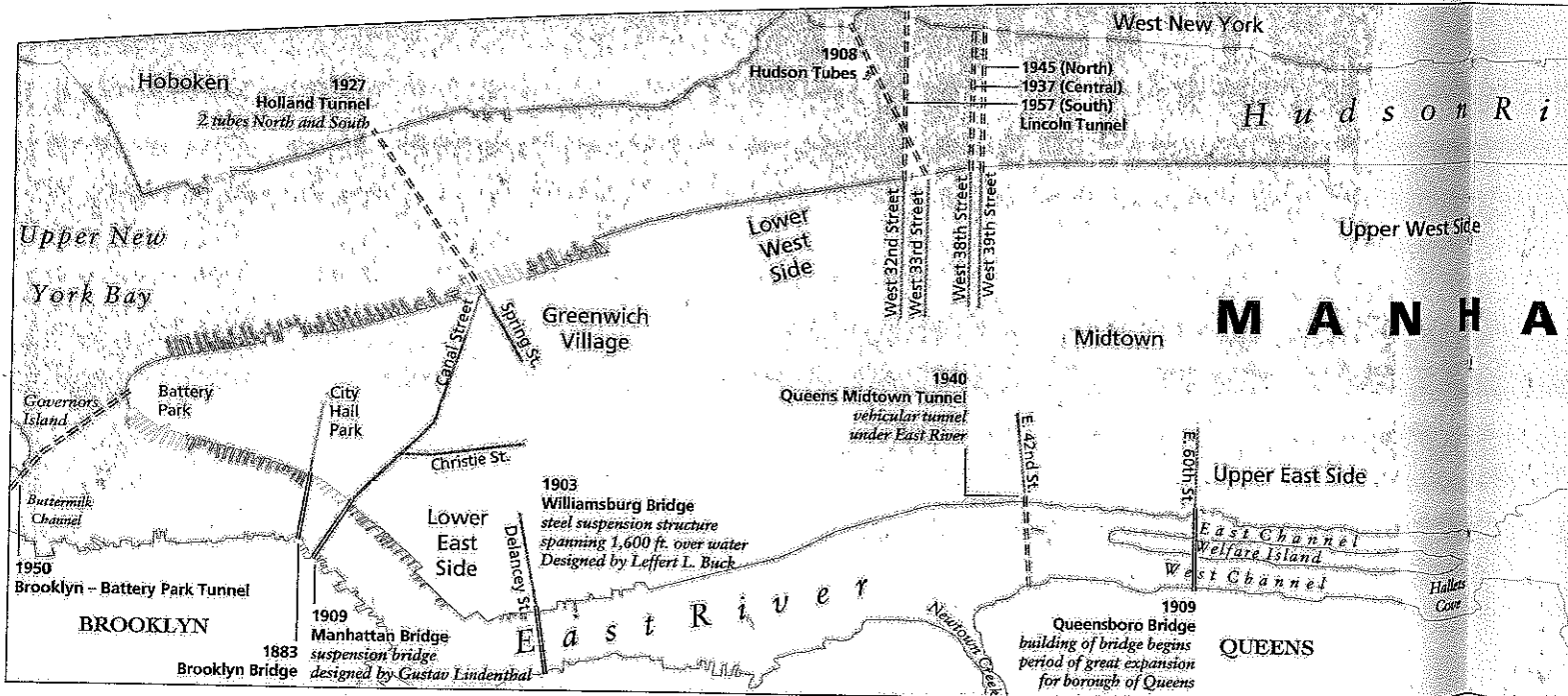
Until the completion of the Golden Gate in San Francisco, no bridge in America so completely effected the marriage of form and function as the Brooklyn Bridge. Until 1903, with a length of 6,106 feet, it was the longest suspension bridge in the world. Its solid granite towers rise 272 feet above the mean water line. When opened in 1883, it encouraged many Americans to rethink the role of engineers and designers. They were the invisible heroes of urban life, the ones who made things which worked day in and day out. In an era when the most spectacular building could be demolished when it no longer served an economic purpose, or be left stranded as commercial life moved uptown, bridges and tunnels were permanent. They connected the city to the surrounding communities, and made possible the city's growth. The quality of their design and civic optimism of the capital investment they represent, remain.

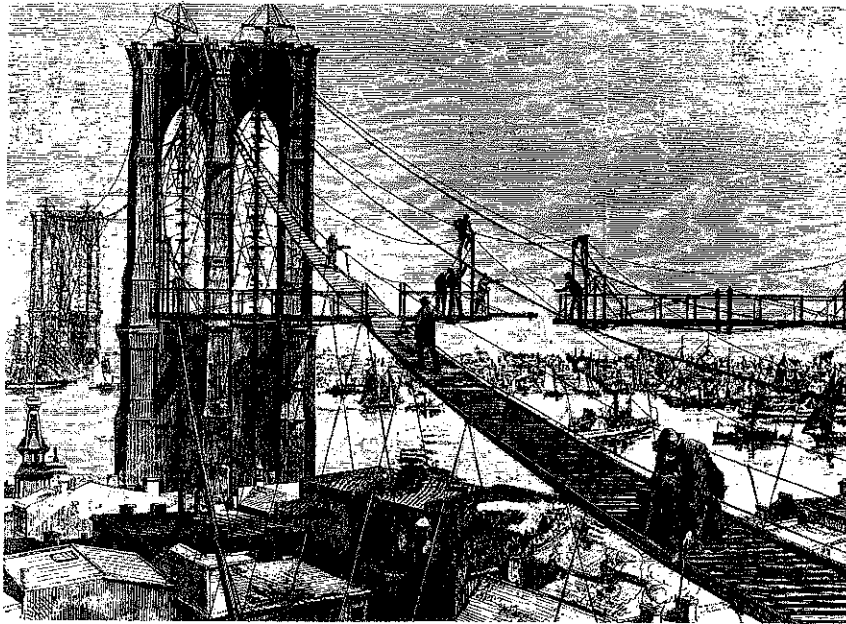
The designers of the Brooklyn Bridge, John A. Roebling (a German immigrant who settled in Pittsburg in 1831) and his son Washington Roebling, were the first of these largely invisible men, civil engineers who had mastered the techniques



of designing and building bridges. They were followed by C.F. Holland, builder of the Holland Tunnel, and O.H. Ammann who built the George Washington bridge. The solution of complex design problems inherent in such large structures (if the bridge itself hung on flexible steel cables how could it be stable?) was only the beginning of the process which led to the construction of the bridge: the Roebings had to promote the idea of a bridge, and deal with politicians as well. Characteristically, it was a private sector enterprise, funded by bonds issued by the cities of Brooklyn and New York. Toll for pedestrians was one cent.

A photograph by William Henry Jackson taken in 1890 (above) looks south along the Harlem River to Washington Bridge in the foreground (built in 1888) and High Bridge. The oldest remaining bridge connecting the city to the mainland, High Bridge was built between 1837 and 1848 as part of the Croton Aqueduct system, carrying about 24 million gallons of water a day into the city. It was designed on Roman architectural principles, with massive stone arches over both land and water. By 1939, few of the old arches remained.





"Seen even from afar, this bridge astounds you.. walk across it, feel the quivering of the monstrous trellis of iron and steel... and you will feel that the engineer is the great artist of our epoch..." Paul Bourget, *Autre-mer; impressions of America*, 1895

The views (above) of the Brooklyn Bridge, still under construction in 1877, and the completed bridge (right) both appeared in Harper's Weekly. On May 19, 1885, Robert E. Odum jumped off the bridge for a bet (top right). He died 45 minutes later from internal hemorrhaging.

