Brooklyn Bridge

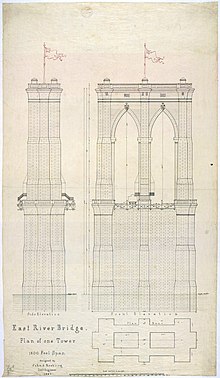
The **Brooklyn Bridge** is a hybrid [cable-stayed](https://en.wikipedia.org/wiki/Cable-stayed_bridge)/[suspension bridge](https://en.wikipedia.org/wiki/Suspension_bridge) in [New York City](https://en.wikipedia.org/wiki/New_York_City), spanning the [East River](https://en.wikipedia.org/wiki/East_River) between the boroughs of [Manhattan](https://en.wikipedia.org/wiki/Manhattan) and [Brooklyn](https://en.wikipedia.org/wiki/Brooklyn). Opened on May 24, 1883, the Brooklyn Bridge was the first fixed crossing of the East River. It was also the [longest suspension bridge in the world](https://en.wikipedia.org/wiki/List_of_longest_suspension_bridge_spans#History_of_longest_suspension_spans) at the time of its opening, with a main span of 1,595.5 feet (486.3 m) and a deck 127 ft (38.7 m) above [mean high water](https://en.wikipedia.org/wiki/Mean_High_Water). The span was originally called the **New York and Brooklyn Bridge** or the **East River Bridge** but was officially renamed the Brooklyn Bridge in 1915.

Proposals for a bridge connecting Manhattan and Brooklyn were first made in the early 19th century, which eventually led to the construction of the current span, designed by [John A. Roebling](https://en.wikipedia.org/wiki/John_A._Roebling). The project's chief engineer, his son [Washington Roebling](https://en.wikipedia.org/wiki/Washington_Roebling), contributed further design work, assisted by the latter's wife, [Emily Warren Roebling](https://en.wikipedia.org/wiki/Emily_Warren_Roebling). Construction started in 1870, with the [Tammany Hall](https://en.wikipedia.org/wiki/Tammany_Hall)-controlled New York Bridge Company overseeing construction, although numerous controversies and the novelty of the design prolonged the project over thirteen years. Since opening, the Brooklyn Bridge has undergone several reconfigurations, having carried horse-drawn vehicles and elevated railway lines until 1950. To alleviate increasing traffic flows, additional bridges and tunnels were built across the East River. Following gradual deterioration, the Brooklyn Bridge has been renovated several times, including in the 1950s, 1980s, and 2010s.

The Brooklyn Bridge is the southernmost of the four toll-free vehicular bridges connecting Manhattan Island and [Long Island](https://en.wikipedia.org/wiki/Long_Island), with the [Manhattan Bridge](https://en.wikipedia.org/wiki/Manhattan_Bridge), the [Williamsburg Bridge](https://en.wikipedia.org/wiki/Williamsburg_Bridge), and the [Queensboro Bridge](https://en.wikipedia.org/wiki/Queensboro_Bridge" \o "Queensboro Bridge) to the north. Only passenger vehicles and pedestrian and bicycle traffic are permitted. A major tourist attraction since its opening, the Brooklyn Bridge has become an icon of New York City. Over the years, the bridge has been used as the location of various stunts and performances, as well as several crimes and attacks. The Brooklyn Bridge has been designated a [National Historic Landmark](https://en.wikipedia.org/wiki/National_Historic_Landmark), a [New York City landmark](https://en.wikipedia.org/wiki/New_York_City_Landmarks_Preservation_Commission), and a [National Historic Civil Engineering Landmark](https://en.wikipedia.org/wiki/List_of_historic_civil_engineering_landmarks).

History[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=9" \o "Edit section: History)]

**Planning**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=10" \o "Edit section: Planning)]

[](https://en.wikipedia.org/wiki/File:BrooklynBridgeSchematic.jpg)

Early Brooklyn Bridge tower plan, 1867

Proposals for a bridge between the then-separate cities of Brooklyn and New York had been suggested as early as 1800.[[56]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._24-25-59)[[39]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19291229-41) At the time, the only travel between the two cities was by [a number of ferry lines](https://en.wikipedia.org/wiki/List_of_ferries_across_the_East_River).[[56]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._24-25-59)[[57]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19330521-60) Engineers presented various designs, such as chain or link bridges, though these were never built because of the difficulties of constructing a high enough fixed-span bridge across the extremely busy East River.[[56]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._24-25-59)[[39]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19291229-41) There were also proposals for tunnels under the East River, but these were considered prohibitively expensive.[[58]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18830524-61) The current Brooklyn Bridge was conceived by German immigrant John Augustus Roebling in 1852. He had previously designed and constructed shorter suspension bridges, such as [Roebling's Delaware Aqueduct](https://en.wikipedia.org/wiki/Roebling%27s_Delaware_Aqueduct) in [Lackawaxen, Pennsylvania](https://en.wikipedia.org/wiki/Lackawaxen,_Pennsylvania" \o "Lackawaxen, Pennsylvania), and the [John A. Roebling Suspension Bridge](https://en.wikipedia.org/wiki/John_A._Roebling_Suspension_Bridge) between [Cincinnati, Ohio](https://en.wikipedia.org/wiki/Cincinnati,_Ohio), and [Covington, Kentucky](https://en.wikipedia.org/wiki/Covington,_Kentucky).[[59]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-62)

In February 1867, the New York State Senate passed a bill that allowed the construction of a suspension bridge from Brooklyn to Manhattan.[[60]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-63) Two months later, the New York and Brooklyn Bridge Company was incorporated with a board of directors (later converted to a board of trustees).[[56]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._24-25-59)[[61]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nybc-incorporation-64)[[62]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18720410-65) There were twenty trustees in total: eight each appointed by the mayors of New York and Brooklyn, as well as the mayors of each city and the auditor and comptroller of Brooklyn.[[38]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-sun18910611-40) The company was tasked with constructing what was then known as the New York and Brooklyn Bridge.[[56]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._24-25-59)[[61]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nybc-incorporation-64)[[62]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18720410-65) Alternatively, the span was just referred to as the "Brooklyn Bridge", a name originating in a January 25, 1867, [letter to the editor](https://en.wikipedia.org/wiki/Letter_to_the_editor) sent to the [*Brooklyn Daily Eagle*](https://en.wikipedia.org/wiki/Brooklyn_Eagle)*.*[[63]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-66) The act of incorporation, which became law on April 16, 1867, authorized the cities of New York (now Manhattan) and Brooklyn to subscribe to $5 million in [capital stock](https://en.wikipedia.org/wiki/Capital_stock), which would fund the bridge's construction.[[58]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18830524-61)

Artists' conception, by [Currier and Ives](https://en.wikipedia.org/wiki/Currier_and_Ives), of the bridge while construction was underway, 1872

Roebling was subsequently named the main engineer of the work, and by September 1867, had presented a master plan.[[56]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._24-25-59)[[64]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-67)[[65]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-68) According to it, the bridge would be longer and taller than any suspension bridge previously built.[[7]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._29-31-7) It would incorporate roadways and [elevated rail](https://en.wikipedia.org/wiki/Elevated_railway) tracks, whose tolls and fares would provide the means to pay for the bridge's construction. It would also include a raised promenade that served as a leisurely pathway.[[66]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._32-33-69) The proposal received much acclaim in both cities, and residents predicted that the New York and Brooklyn Bridge's opening would have as much of an impact as the [Suez Canal](https://en.wikipedia.org/wiki/Suez_Canal), the first [transatlantic telegraph cable](https://en.wikipedia.org/wiki/Transatlantic_telegraph_cable) or the [first transcontinental railroad](https://en.wikipedia.org/wiki/First_Transcontinental_Railroad). By early 1869, however, some individuals started to criticize the project, saying either that the bridge was too expensive, or that the construction process was too difficult.[[67]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-70)

To allay concerns about the design of the New York and Brooklyn Bridge, Roebling set up a "Bridge Party" in March 1869, where he invited engineers and members of U.S. Congress to see his other spans.[[68]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-71) Following the bridge party in April, Roebling and several engineers conducted final surveys. During the process, it was determined that the main span would have to be raised from 130 to 135 feet (40 to 41 m) above MHW, requiring several changes to the overall design.[[69]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-72) In June 1869, while conducting these surveys, Roebling sustained a crush injury to his foot when a [ferry](https://en.wikipedia.org/wiki/Ferry) pinned it against a [piling](https://en.wikipedia.org/wiki/Piling).[[70]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-73)[[71]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-74) After amputation of his crushed toes, he developed a [tetanus](https://en.wikipedia.org/wiki/Tetanus) infection that left him incapacitated and resulted in his death the following month. [Washington Roebling](https://en.wikipedia.org/wiki/Washington_Roebling), John Roebling's 32-year-old son, was then hired to fill his father's role.[[72]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-75)[[73]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-76) When the younger Roebling was hired, [Tammany Hall](https://en.wikipedia.org/wiki/Tammany_Hall) leader [William M. Tweed](https://en.wikipedia.org/wiki/William_M._Tweed) also became involved in the bridge's construction because, as a major landowner in New York City, he had an interest in the project's completion.[[74]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-77) The New York and Brooklyn Bridge Company—later known simply as the New York Bridge Company[[75]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-78)—was actually overseen by Tammany Hall, and it approved Roebling's plans and designated him as chief engineer of the project.[[76]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-79)

**Construction**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=11" \o "Edit section: Construction)]

**Caissons**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=12" \o "Edit section: Caissons)]

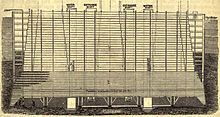
[](https://en.wikipedia.org/wiki/File:AmCyc_Caisson_-_Caisson_of_East_River_Bridge.jpg)

Diagram of the caisson

Construction of the Brooklyn Bridge began on January 2, 1870.[[38]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-sun18910611-40) The first work entailed the construction of two caissons, upon which the suspension towers would be built.[[53]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-structure_mag-56)[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5) The Brooklyn side's caisson was built at the Webb & Bell shipyard in [Greenpoint, Brooklyn](https://en.wikipedia.org/wiki/Greenpoint,_Brooklyn" \o "Greenpoint, Brooklyn), and was launched into the river on March 19, 1870.[[53]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-structure_mag-56)[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5) Compressed air was pumped into the caisson, and workers entered the space to dig the sediment until it sank to the bedrock. As one sixteen-year-old from Ireland, [Frank Harris](https://en.wikipedia.org/wiki/Frank_Harris), described the fearful experience:[[77]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-:02-80)

The six of us were working naked to the waist in the small iron chamber with the temperature of about 80 degrees Fahrenheit: In five minutes the sweat was pouring from us, and all the while we were standing in icy water that was only kept from rising by the terrific pressure. No wonder the headaches were blinding.[[77]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-:02-80)

Once the caisson had reached the desired depth, it was to be filled in with vertical brick [piers](https://en.wikipedia.org/wiki/Pier_(architecture)) and concrete.[[78]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-81)[[79]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_p._196-82) However, due to the unexpectedly high concentration of large boulders atop the riverbed, the Brooklyn caisson took several months to sink to the desired depth.[[79]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_p._196-82)[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5) Furthermore, in December 1870, its timber roof caught fire, delaying construction further.[[80]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-83)[[81]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-84) The "Great Blowout", as the fire was called, delayed construction for several months, since the holes in the caisson had to be repaired.[[82]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._242-245-85) On March 6, 1871, the repairs were finished, and the caisson had reached its final depth of 44.5 feet (13.6 m); it was filled with concrete five days later.[[82]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._242-245-85)[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5) Overall, about 264 individuals were estimated to have worked in the caisson every day, but because of high worker [turnover](https://en.wikipedia.org/wiki/Turnover_(employment)), the final total was thought to be about 2,500 men in total.[[83]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-86) In spite of this, only a few workers were paralyzed. At its final depth, the caisson's air pressure was 21 pounds per square inch (140 kPa).[[84]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Talbot_p._3-87)

The Manhattan side's caisson was the next structure to be built. To ensure that it would not catch fire like its counterpart had, the Manhattan caisson was lined with fireproof plate iron.[[55]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nydh18710418-58) It was launched from Webb & Bell's shipyard on May 11, 1871,[[85]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-88)[[42]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._5-44) and maneuvered into place that September.[[86]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-89)[[53]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-structure_mag-56) Due to the extreme underwater air pressure inside the much deeper Manhattan caisson, many workers became sick with "the bends"—[decompression sickness](https://en.wikipedia.org/wiki/Decompression_sickness)—during this work,[[77]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-:02-80) despite the incorporation of airlocks (which were believed to help with decompression sickness at the time).[[87]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Hudson-90)[[88]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-91) This condition was unknown at the time and was first called "caisson disease" by the project physician, Andrew Smith.[[89]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-92)[[90]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-93) Between January 25 and May 31, 1872, Smith treated 110 cases of decompression sickness, while three workers died from the disease.[[42]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._5-44) When iron probes underneath the Manhattan caisson found the [bedrock](https://en.wikipedia.org/wiki/Bedrock) to be even deeper than expected, Washington Roebling halted construction due to the increased risk of decompression sickness.[[42]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._5-44)[[91]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-94) After the Manhattan caisson reached a depth of 78.5 feet (23.9 m) with an air pressure of 35 pounds per square inch (240 [kPa](https://en.wikipedia.org/wiki/Pascal_(unit)" \o "Pascal (unit))),[[84]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Talbot_p._3-87) Washington deemed the sandy subsoil overlying the bedrock 30 feet (9.1 m) beneath to be sufficiently firm, and subsequently infilled the caisson with concrete in July 1872.[[42]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._5-44)[[92]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-95)

Washington Roebling himself suffered a paralyzing injury as a result of caisson disease shortly after ground was broken for the Brooklyn tower foundation.[[39]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19291229-41)[[93]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-96) His debilitating condition left him unable to supervise the construction in person, so he designed the caissons and other equipment from his apartment, directing "the completion of the bridge through a telescope from his bedroom."[[77]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-:02-80) His wife, [Emily Warren Roebling](https://en.wikipedia.org/wiki/Emily_Warren_Roebling), not only provided written communications between her husband and the engineers on site,[[94]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._297-298-97) but also understood [mathematics](https://en.wikipedia.org/wiki/Mathematics), calculations of [catenary](https://en.wikipedia.org/wiki/Catenary) curves, strengths of materials, bridge specifications, and the intricacies of cable construction. She spent the next 11 years helping supervise the bridge's construction,[[84]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-Talbot_p._3-87)[[95]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-98) taking over much of the chief engineer's duties, including day-to-day supervision and project management.[[96]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-99)

**Towers**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=13" \o "Edit section: Towers)]

[](https://en.wikipedia.org/wiki/File:Manhattan_1876.jpg)

View of Manhattan in 1876, showing the Brooklyn Bridge under construction

After the caissons were completed, piers were constructed on top of each of them upon which masonry towers would be built. The towers' construction was a complex process that took four years. Since the masonry blocks were heavy, the builders transported them to the base of the towers using a [pulley](https://en.wikipedia.org/wiki/Pulley) system with a continuous 1.5-inch (3.8 cm)-diameter steel wire rope, operated by steam engines at ground level. The blocks were then carried up on a timber track alongside each tower and maneuvered into the proper position using a [derrick](https://en.wikipedia.org/wiki/Derrick) atop the towers.[[42]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._5-44)[[97]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_p._333-100) The blocks sometimes vibrated the ropes because of their weight, but only once did a block fall.[[97]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_p._333-100)

Construction on the suspension towers started in mid-1872, and by the time work was halted for the winter in late 1872, parts of each tower had already been built.[[94]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._297-298-97) By mid-1873, there was substantial progress on the towers' construction. The Brooklyn side's tower had reached a height of 164 feet (50 m) above mean high water, while the tower on the Manhattan side had reached 88 feet (27 m) above MHW.[[98]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-101)[[99]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-102) The arches of the Brooklyn tower were completed by August 1874.[[100]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-103) The tower was substantially finished by December 1874 with the erection of saddle plates for the main cables at the top of the tower. However, the ornamentation on the Brooklyn tower could not be completed until the Manhattan tower was finished.[[101]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-104) The last stone on the Brooklyn tower was raised in June 1875 and the Manhattan tower was completed in July 1876.[[102]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-105) The saddle plates atop both towers were also raised in July 1876.[[103]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_p._338-106) The work was dangerous: by 1876, three workers had died having fallen from the towers, while nine other workers were killed in other accidents.[[104]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-107)

[](https://en.wikipedia.org/wiki/File:Brainerd,_From_Bridge_Tower._1996.164.2-1425.jpg)

[George Bradford Brainerd](https://en.wikipedia.org/wiki/George_Bradford_Brainerd), *From Bridge Tower*, c. 1872, [Brooklyn Museum](https://en.wikipedia.org/wiki/Brooklyn_Museum)

In 1875, while the towers were being constructed, the project had depleted its original $5 million budget. Two bridge commissioners, one each from Brooklyn and Manhattan, petitioned New York state lawmakers to allot another $8 million for construction. Ultimately, the legislators passed a law authorizing the allotment with the condition that the cities would buy the stock of Brooklyn Bridge's private stockholders.[[105]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-108)

Work proceeded concurrently on the anchorages on each side.[[106]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-109) The Brooklyn anchorage broke ground in January 1873[[107]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-110)[[33]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._330-331-35) and was subsequently substantially completed in August 1875.[[108]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-111)[[33]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._330-331-35) The Manhattan anchorage was built in less time, having started in May 1875, it was mostly completed in July 1876.[[109]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-112)[[110]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-113) The anchorages could not be fully completed until the main cables were spun, at which point another 6 feet (1.8 m) would be added to the height of each 80-foot (24 m) anchorage.[[111]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18770911-114)

**Cables**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=14" \o "Edit section: Cables)]

The first temporary wire was stretched between the towers on August 15, 1876,[[103]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_p._338-106)[[112]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-115)[[113]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bde18760811-116) using [chrome steel](https://en.wikipedia.org/wiki/Chrome_steel) provided by the Chrome Steel Company of Brooklyn.[[103]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_p._338-106)[[113]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bde18760811-116) The wire was then stretched back across the river, and the two ends were [spliced](https://en.wikipedia.org/wiki/Rope_splicing) to form a traveler, a lengthy loop of wire connecting the towers, which was driven by a 30 horsepower (22 kW) steam hoisting engine at ground level.[[114]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-117) The wire was one of two that were used to create a temporary footbridge for workers while cable spinning was ongoing.[[115]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18760830-118) The next step was to send an engineer across the completed traveler wire in a [boatswain's chair](https://en.wikipedia.org/wiki/Bosun%27s_chair) slung from the wire, to ensure it was safe enough. The bridge's master mechanic, E.F. Farrington, was selected for this task, and an estimated crowd of 10,000 people on both shores watched him cross.[[116]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-119)[[117]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-120) A second traveler wire was then stretched across the span, a task that was completed by August 30.[[118]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-121)[[115]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18760830-118) The temporary footbridge, located some 60 feet (18 m) above the elevation of the future deck, was completed in February 1877.[[119]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-122)

[](https://en.wikipedia.org/wiki/File:Construction_of_Brooklyn_Bridge,_ca._1872-1887._(5832930865).jpg)

Under construction, c. 1872 – c. 1887

[](https://en.wikipedia.org/wiki/File:View_from_Tower_to_Tower,_1877.jpg)

"From Tower to Tower—the suspension bridge over the East River—view from the Brooklyn Tower" (1877)

By December 1876, a steel contract for the permanent cables still had not been awarded.[[120]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18761228-123) There was disagreement over whether the bridge's cables should use the as-yet-untested [Bessemer steel](https://en.wikipedia.org/wiki/Bessemer_steel) or the well-proven [crucible steel](https://en.wikipedia.org/wiki/Crucible_steel).[[19]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Talbot_p._4-21)[[121]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-124) Until a permanent contract was awarded, the builders ordered 30 short tons (27 long tons) of wire in the interim, 10 tons each from three companies, including Washington Roebling's own steel mill in Brooklyn.[[122]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-125) In the end, it was decided to use number 8 [Birmingham gauge](https://en.wikipedia.org/wiki/Birmingham_gauge) (approximately 4 mm or 0.165 inches in diameter) crucible steel, and a request for bids was distributed, to which eight companies responded.[[120]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18761228-123) In January 1877, a contract for crucible steel was awarded to [J. Lloyd Haigh](https://en.wikipedia.org/w/index.php?title=J._Lloyd_Haigh&action=edit&redlink=1),[[19]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Talbot_p._4-21)[[123]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-126)[[124]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-127) who was associated with bridge trustee [Abram Hewitt](https://en.wikipedia.org/wiki/Abram_Hewitt), whom Roebling distrusted.[[21]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19860308-23)[[125]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-128)

The spinning of the wires required the manufacture of large coils of it which were galvanized but not oiled when they left the factory. The coils were delivered to a yard near the Brooklyn anchorage. There they were dipped in [linseed oil](https://en.wikipedia.org/wiki/Linseed_oil), hoisted to the top of the anchorage, dried out and spliced into a single wire, and finally coated with red zinc for further galvanizing.[[126]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._400-401-129)[[127]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-130) There were thirty-two drums at the anchorage yard, eight for each of the four main cables. Each drum had a capacity of 60,000 feet (18,000 m) of wire.[[128]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-131) The first experimental wire for the main cables was stretched between the towers on May 29, 1877, and spinning began two weeks later.[[126]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._400-401-129) All four main cables were being strung by that July. During that time, the temporary footbridge was unofficially opened to members of the public, who could receive a visitor's pass; by August 1877 several thousand visitors from around the world had used the footbridge.[[129]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._405-408-132) The visitor passes ceased that September after a visitor had an [epileptic seizure](https://en.wikipedia.org/wiki/Epileptic_seizure) and nearly fell off.[[129]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._405-408-132)[[130]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bde18771002-133)

**Opening**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=17" \o "Edit section: Opening)]

[](https://en.wikipedia.org/wiki/File:1883_Frank_Leslie%27s_Illustrated_Newspaper_Brooklyn_Bridge_New_York_City.jpg)

Newspaper headline announcing the Brooklyn Bridge's opening

The New York and Brooklyn Bridge was opened for use on May 24, 1883. Thousands of people attended the opening ceremony, and many ships were present in the East River for the occasion.[[161]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-165) Officially, Emily Warren Roebling was the first to cross the bridge.[[162]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bpl-timeline-166) The bridge opening was also attended by U.S. president [Chester A. Arthur](https://en.wikipedia.org/wiki/Chester_A._Arthur) and New York mayor [Franklin Edson](https://en.wikipedia.org/wiki/Franklin_Edson), who crossed the bridge and shook hands with Brooklyn mayor Seth Low at the Brooklyn end.[[163]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Reeves_pp._359-360-167) Abram Hewitt gave the principal address.[[164]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-168)[[165]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-169)

It is not the work of any one man or of any one age. It is the result of the study, of the experience, and of the knowledge of many men in many ages. It is not merely a creation; it is a growth. It stands before us today as the sum and epitome of human knowledge; as the very heir of the ages; as the latest glory of centuries of patient observation, profound study and accumulated skill, gained, step by step, in the never-ending struggle of man to subdue the forces of nature to his control and use.

— *Abram Hewitt*[[166]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-170)

Though Washington Roebling was unable to attend the ceremony (and rarely visited the site again), he held a celebratory banquet at his house on the day of the bridge opening. Further festivity included the performance by a band, gunfire from ships, and a fireworks display.[[163]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Reeves_pp._359-360-167) On that first day, a total of 1,800 vehicles and 150,300 people crossed the span.[[162]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bpl-timeline-166) Less than a week after the Brooklyn Bridge opened, ferry crews reported a sharp drop in patronage, while the bridge's toll operators were processing over a hundred people a minute.[[167]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-171) However, cross-river ferries continued to operate until 1942.[[168]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bc18830531-172)

"Bird's-Eye View of the Great New York and Brooklyn Bridge and Grand Display of Fire Works on Opening Night"

The bridge had cost US$15.5 million in 1883 dollars (about US$436,232,000 in 2021[[169]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-inflation-US-173)) to build, of which Brooklyn paid two-thirds.[[162]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bpl-timeline-166)[[38]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-sun18910611-40) The bonds to fund the construction would not be paid off until 1956.[[170]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-174) An estimated 27 men died during its construction.[[162]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bpl-timeline-166)[[38]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-sun18910611-40) Since the New York and Brooklyn Bridge was the only bridge across the East River at that time, it was also called the East River Bridge.[[171]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-175) Until the construction of the nearby [Williamsburg Bridge](https://en.wikipedia.org/wiki/Williamsburg_Bridge) in 1903, the New York and Brooklyn Bridge was the longest suspension bridge in the world, 20% longer than any built previously.[[172]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NiagaraCliftonBridge-176)

At the time of opening, the Brooklyn Bridge was not complete; the proposed public transit across the bridge was still being tested, while the Brooklyn approach was being completed.[[173]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-177) On May 30, 1883, six days after the opening, a woman falling down a stairway at the Brooklyn approach caused a stampede which resulted in at least twelve people being crushed and killed.[[174]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-178)[[168]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bc18830531-172) In subsequent lawsuits, the Brooklyn Bridge Company was acquitted of negligence.[[168]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bc18830531-172) However, the company did install emergency phone boxes and additional railings,[[175]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-179) and the trustees approved a fireproofing plan for the bridge.[[176]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-180) Public transit service began with the opening of the [New York and Brooklyn Bridge Railway](https://en.wikipedia.org/wiki/New_York_and_Brooklyn_Bridge_Railway), a cable car service, on September 25, 1883.[[168]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-bc18830531-172)[[177]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18830925-181)[[178]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Small_p._5-182) On May 17, 1884, one of the circus master [P. T. Barnum](https://en.wikipedia.org/wiki/P._T._Barnum)'s most famous attractions, [Jumbo](https://en.wikipedia.org/wiki/Jumbo) the elephant, led a parade of 21 elephants over the Brooklyn Bridge. This helped to lessen doubts about the bridge's stability while also promoting Barnum's circus.[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-tribune19220729-9)[[179]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-183)[[180]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-184)[[181]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._546-547-185)

**Late 19th through early 20th centuries**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=18" \o "Edit section: Late 19th through early 20th centuries)]

[](https://en.wikipedia.org/wiki/File:Brooklyn_Bridge,_Looking_East,_New_York_City_Side,_July_7,_1899._(5833478432).jpg)

Eastward view in 1899

Patronage across the Brooklyn Bridge increased in the years after it opened; a million people paid to cross in the six first months. The bridge carried 8.5 million people in 1884, its first full year of operation; this number doubled to 17 million in 1885 and again to 34 million in 1889.[[38]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-sun18910611-40) Many of these people were cable car passengers.[[182]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Small_pp._10-11-186) Additionally, about 4.5 million pedestrians a year were crossing the bridge for free by 1892.[[183]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-187)

The first proposal to make changes to the bridge was sent in only two and a half years after it opened, when [Linda Gilbert](https://en.wikipedia.org/wiki/Linda_Gilbert) suggested glass steam-powered elevators and an observatory be added to the bridge and a fee charged for use, which would in part fund the bridge's upkeep and in part fund her prison reform charity.[[184]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-:0-188) This proposal was considered but not acted upon. Numerous other proposals were made during the first fifty years of the bridge's life.[[184]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-:0-188)

[Trolley](https://en.wikipedia.org/wiki/Tram) tracks were added in the center lanes of both roadways in 1898, allowing trolleys to use the bridge as well. That year, the formerly separate City of Brooklyn was unified with New York City, and the Brooklyn Bridge fell under city control.[[185]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Small_p._14-189)[[186]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18980217-190)

Concerns about the Brooklyn Bridge's safety were raised during the turn of the century. In 1898, traffic backups due to a dead horse caused one of the truss cords to buckle.[[187]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19020316-191) There were more significant worries after twelve suspender cables snapped in 1901,[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-tribune19220729-9)[[188]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-192)[[189]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-193) though a thorough investigation found no other defects.[[190]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-194) After the 1901 incident, five inspectors were hired to examine the bridge each day, a service that cost $250,000 a year.[[191]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-195) The [Brooklyn Rapid Transit Company](https://en.wikipedia.org/wiki/Brooklyn_Rapid_Transit_Company), which operated routes across the Brooklyn Bridge, issued a notice in 1905 saying that the bridge had reached its transit capacity.[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-tribune19220729-9)

By 1890, due to the popularity of the Brooklyn Bridge, there were proposals to construct other bridges across the East River between Manhattan and [Long Island](https://en.wikipedia.org/wiki/Long_Island).[[192]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-196) Although a second deck for the Brooklyn Bridge was proposed, it was thought to be infeasible because doing so would overload the bridge's structural capacity.[[187]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19020316-191) The first new bridge across the East River, the Williamsburg Bridge, opened upstream in 1903 and connected [Williamsburg, Brooklyn](https://en.wikipedia.org/wiki/Williamsburg,_Brooklyn), with the [Lower East Side](https://en.wikipedia.org/wiki/Lower_East_Side) of Manhattan.[[193]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-197) This was followed by the [Queensboro Bridge](https://en.wikipedia.org/wiki/Queensboro_Bridge" \o "Queensboro Bridge) between Queens and Manhattan in March 1909,[[194]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-198) and the [Manhattan Bridge](https://en.wikipedia.org/wiki/Manhattan_Bridge) between Brooklyn and Manhattan in December 1909.[[195]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-199) Several subway, railroad, and road tunnels were also constructed, which helped to accelerate the development of Manhattan, Brooklyn, and Queens.[[196]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-200)[[57]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19330521-60)

Though tolls had been instituted for carriages and cable-car customers since the bridge's opening, pedestrians were spared from the tolls originally.[[155]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt18830313-159) However, by the first decade of the 20th century, pedestrians were also paying tolls.[[197]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-201) Tolls on all four bridges across the East River—the Brooklyn Bridge, as well as the [Manhattan](https://en.wikipedia.org/wiki/Manhattan_Bridge), [Williamsburg](https://en.wikipedia.org/wiki/Williamsburg_Bridge), and [Queensboro](https://en.wikipedia.org/wiki/Queensboro_Bridge" \o "Queensboro Bridge) bridges to the north—were abolished in July 1911 as part of a populist policy initiative headed by New York City mayor [William Jay Gaynor](https://en.wikipedia.org/wiki/William_Jay_Gaynor).[[198]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-202)[[199]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-203) The city government passed a bill to officially name the structure the "Brooklyn Bridge" in January 1915.[[200]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-brooklyn-by-name-204) Ostensibly in an attempt to reduce traffic on nearby city streets, [Grover Whalen](https://en.wikipedia.org/wiki/Grover_Whalen), the commissioner of Plant and Structures, banned motor vehicles from the Brooklyn Bridge in 1922.[[201]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19220707-205) The real reason for the ban was an incident the same year where two cables slipped due to high traffic loads.[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-tribune19220729-9)[[202]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19220729-206) Both Whalen and Roebling called for the renovation of the Brooklyn Bridge and the construction of a parallel bridge, though the parallel bridge was never built.[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-tribune19220729-9)[[202]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19220729-206)[[203]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-207)

**Mid- to late 20th century**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=19" \o "Edit section: Mid- to late 20th century)]

**Upgrades**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=20" \o "Edit section: Upgrades)]

[](https://en.wikipedia.org/wiki/File:BrooklynBridgeRampsMANH.jpg)

Ramp from the Brooklyn Bridge to FDR Drive (pictured in 2008), completed c. 1969

The first major upgrade to the Brooklyn Bridge commenced in 1948, when a contract for redesigning the roadways were awarded to [David B. Steinman](https://en.wikipedia.org/wiki/David_B._Steinman).[[204]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19480904-208)[[205]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-209) The renovation was expected to double the capacity of the bridge's roadways to nearly 6,000 cars per hour,[[204]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19480904-208) at a projected cost of $7 million.[[206]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19500920-210) The renovation included the demolition of both the elevated and the trolley tracks on the roadways, the removal of trusses separating the inner elevated tracks from the existing vehicle lanes and the widening of each roadway from two to three lanes,[[206]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19500920-210)[[207]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-211) as well as the construction of a new steel-and-concrete floor.[[208]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-212) In addition, new ramps were added to Adams Street, [Cadman Plaza](https://en.wikipedia.org/wiki/Cadman_Plaza), and the [Brooklyn Queens Expressway](https://en.wikipedia.org/wiki/Brooklyn_Queens_Expressway) (BQE) on the Brooklyn side, and to Park Row on the Manhattan side.[[209]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-213) The trolley tracks closed in March 1950 to allow for the widening work to occur.[[210]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Small_p._20-214)[[211]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19500303-215) During the construction project, one roadway at a time was closed, allowing reduced traffic flows to cross the bridge in one direction only.[[212]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nydn19540502-216) The widened south roadway was completed in May 1951,[[213]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-217) followed by the north roadway in October 1953.[[214]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-218) The restoration was finished in May 1954 with the completion of the reconstructed elevated promenade.[[215]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19540504-219)[[212]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nydn19540502-216)

While the rebuilding of the span was ongoing, a fallout shelter was constructed beneath the Manhattan approach in anticipation of the [Cold War](https://en.wikipedia.org/wiki/Cold_War). The abandoned space in one of the masonry arches was stocked with emergency survival supplies for a potential nuclear attack by the [Soviet Union](https://en.wikipedia.org/wiki/Soviet_Union); these supplies remained in place half a century later.[[216]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-220) In addition, defensive barriers were added to the bridge as a safeguard against sabotage.[[217]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-221)

Simultaneous with the rebuilding of the Brooklyn Bridge, a double-decked viaduct for the BQE was being built through an existing steel overpass of the bridge's Brooklyn approach ramp.[[218]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-222) The segment of the BQE from Brooklyn Bridge south to [Atlantic Avenue](https://en.wikipedia.org/wiki/Atlantic_Avenue_(New_York_City)) opened in June 1954,[[219]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-223) but the direct ramp from the northbound BQE to the Manhattan-bound Brooklyn Bridge did not open until 1959.[[220]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-224) The city also widened the Adams Street approach in Brooklyn, between the bridge and [Fulton Street](https://en.wikipedia.org/wiki/Fulton_Street_(Brooklyn)), from 60 to 160 feet (18 to 49 m) between 1954 and 1955.[[221]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-225)[[222]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-226) Subsequently, Boerum Place from Fulton Street south to Atlantic Avenue was also widened.[[223]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-227) This required the demolition of the old Kings County courthouse.[[224]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-228) The towers were cleaned in 1958[[225]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-229) and the Brooklyn anchorage was repaired the next year.[[226]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-230)

On the Manhattan side, the city approved a controversial rebuilding of the Manhattan entrance plaza in 1953. The project, which would add a grade-separated junction over Park Row, was hotly contested because it would require the demolition of 21 structures, including the old [New York World Building](https://en.wikipedia.org/wiki/New_York_World_Building).[[227]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-231) The reconstruction also necessitated the relocation of 410 families on Park Row.[[228]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-232) In December 1956, the city started a two-year renovation of the plaza. This required the closure of one roadway at a time, as was done during the rebuilding of the bridge itself.[[229]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-233) Work on redeveloping the area around the Manhattan approach started in the mid-1960s.[[230]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-234) At the same time, plans were announced for direct ramps to the [FDR Drive](https://en.wikipedia.org/wiki/FDR_Drive) elevated highway to alleviate congestion at the approach.[[231]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-235) The ramp from the FDR Drive to the Brooklyn Bridge was opened in 1968,[[232]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-236) followed by the ramp from the bridge to the FDR Drive the next year.[[233]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-237) A single ramp from the Manhattan-bound Brooklyn Bridge to northbound Park Row was constructed in 1970.[[234]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-238) A repainting of the bridge was announced two years later in advance of its 90th anniversary.[[235]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-239)

**Deterioration and late-20th century repair**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=21" \o "Edit section: Deterioration and late-20th century repair)]

The Brooklyn Bridge formerly had steps up to the promenade from the Brooklyn approach (seen here in 1982).

The Brooklyn Bridge gradually deteriorated due to age and neglect. While it had 200 full-time dedicated maintenance workers before World War II, that number dropped to five by the late 20th century, and the city as a whole only had 160 bridge maintenance workers.[[236]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-240) In 1974, heavy vehicles such as vans and buses were banned from the bridge to prevent further erosion of the concrete roadway.[[237]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-241) A report in *The New York Times* four years later noted that the cables were visibly fraying and the pedestrian promenade had holes in it.[[238]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-242) The city began planning to replace all the Brooklyn Bridge's cables at a cost of $115 million, as part of a larger project to renovate all four toll-free East River spans.[[239]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19810630-243) By 1980, the Brooklyn Bridge was in such dire condition that it faced imminent closure. In some places, half of the strands in the cables were broken.[[240]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-244)

In June 1981, two of the diagonal stay cables snapped, seriously injuring a pedestrian[[241]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-245)[[242]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nydn19810630-246) who later died.[[21]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19860308-23) Subsequently, the anchorages were found to have developed rust,[[242]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-nydn19810630-246) and an emergency cable repair was necessitated less than a month later after another cable developed slack.[[243]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-247) Following the incident, the city accelerated the timetable of its proposed cable replacement,[[239]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19810630-243) and it commenced a $153 million rehabilitation of the Brooklyn Bridge in advance of the 100th anniversary. As part of the project, the bridge's original suspender cables installed by J. Lloyd Haigh were replaced by [Bethlehem Steel](https://en.wikipedia.org/wiki/Bethlehem_Steel) in 1986, marking the cables' first replacement since construction.[[21]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19860308-23) In addition, the staircase at Washington Street in Brooklyn was renovated,[[244]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-248) the stairs from Tillary and Adams Streets were replaced with a ramp, and the short flights of steps from the promenade to each tower's balcony were removed.[[245]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-249) In a smaller project, the bridge was floodlit at night starting in 1982 to highlight its architectural features.[[246]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-250)

Additional problems persisted, and in 1993, high levels of [lead](https://en.wikipedia.org/wiki/Lead) were discovered near the bridge's towers.[[247]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-251) Further emergency repairs were undertaken in mid-1999 after small concrete shards began falling from the bridge into the East River. The concrete deck had been installed during the 1950s renovations and had a lifespan of about 60 years.[[248]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-252)[[249]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-253) The Park Row exit from the bridge's westbound lanes was closed as a safety measure after the [September 11, 2001, attacks](https://en.wikipedia.org/wiki/September_11_attacks) on the nearby [World Trade Center](https://en.wikipedia.org/wiki/World_Trade_Center_(1973%E2%80%932001)). That section of Park Row had been closed off since it ran right underneath [1 Police Plaza](https://en.wikipedia.org/wiki/1_Police_Plaza), the headquarters of the [New York City Police Department](https://en.wikipedia.org/wiki/New_York_City_Police_Department) (NYPD).[[250]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Buckley_2007-254) In early 2003, to save money on electricity, the NYCDOT turned off the bridge's "necklace lights" at night.[[251]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-255) They were turned back on later that year after several private entities made donations to fund the lights.[[252]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-256)

**21st century**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=22" \o "Edit section: 21st century)]

[](https://en.wikipedia.org/wiki/File:Brooklyn_Bridge_-_New_York_City.jpg)

In 2005, before renovation

[](https://en.wikipedia.org/wiki/File:Brooklyn_Bridge-New_York.jpg)

Renovation in progress

After the 2007 collapse of the [I-35W bridge](https://en.wikipedia.org/wiki/I-35W_Mississippi_River_bridge) in [Minneapolis](https://en.wikipedia.org/wiki/Minneapolis), public attention focused on the condition of bridges across the U.S. [*The New York Times*](https://en.wikipedia.org/wiki/The_New_York_Times) reported that the Brooklyn Bridge approach ramps had received a "poor" rating during an inspection in 2007.[[253]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-257) However, a NYCDOT spokesman said that the poor rating did not indicate a dangerous state but rather implied it required renovation.[[254]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-258) In 2010, the NYCDOT began renovating the approaches and deck, as well as repainting the suspension span.[[255]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NYDN-Renovate-2010-259)[[256]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-260) Work included widening two approach ramps from one to two lanes by re-striping a new prefabricated ramp; raising clearance over the eastbound BQE at York Street; seismic retrofitting; replacement of rusted railings and safety barriers; and road deck resurfacing.[[257]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-261) The work necessitated detours for four years.[[258]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-262) At the time, the project was scheduled to be completed in 2014;[[255]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-NYDN-Renovate-2010-259) but completion was later delayed to 2015,[[259]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-263) then again to 2017.[[260]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Sugar_2016-264) The project's cost also increased from $508 million in 2010[[255]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NYDN-Renovate-2010-259) to $811 million in 2016.[[260]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Sugar_2016-264)

In August 2016, after the renovation had been completed, the NYCDOT announced that it would conduct a seven-month, $370,000 study to verify if the bridge could support a heavier upper deck that consisted of an expanded bicycle and pedestrian path. As of 2016, about 10,000 pedestrians and 3,500 cyclists use the pathway on an average weekday.[[261]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt20160809-265) Work on the pedestrian entrance on the Brooklyn side was underway by 2017.[[262]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-266)

The NYCDOT also indicated in 2016 that it planned to reinforce the Brooklyn Bridge's foundations to prevent it from sinking, as well as repair the masonry arches on the approach ramps, which had been damaged by [Hurricane Sandy](https://en.wikipedia.org/wiki/Hurricane_Sandy) in 2012.[[263]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-267) In July 2018, the [New York City Landmarks Preservation Commission](https://en.wikipedia.org/wiki/New_York_City_Landmarks_Preservation_Commission) approved a further renovation of the Brooklyn Bridge's suspension towers and approach ramps.[[264]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-268) That December, the federal government gave the city $25 million in funding, which would pay for a $337 million rehabilitation of the bridge approaches and the suspension towers.[[265]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-269) Work started in late 2019 and was scheduled to be completed in 2023.[[266]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-270)

In early 2020, [City Council](https://en.wikipedia.org/wiki/New_York_City_Council) speaker [Corey Johnson](https://en.wikipedia.org/wiki/Corey_Johnson_(politician)) and the nonprofit [Van Alen Institute](https://en.wikipedia.org/wiki/Van_Alen_Institute) hosted an international contest to solicit plans for the redesign of the bridge's walkway.[[267]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-271)[[268]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-272) Ultimately, in January 2021, the city decided to install a two-way [protected bike path](https://en.wikipedia.org/wiki/Protected_bicycle_lanes) on the Manhattan-bound roadway, replacing the leftmost vehicular lane. The bike lane would allow the existing promenade to be used by pedestrians.[[269]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-273)[[270]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-274) Work on the bike lane started in June 2021,[[271]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-275)[[272]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-276) and the new path was completed on September 14, 2021.[[273]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-277)[[274]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-278)

**FACTS:**

**Deck**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=2" \o "Edit section: Deck)]

[](https://en.wikipedia.org/wiki/File:DUMBO_(96047423).jpg)

An approach ramp to the Brooklyn Bridge, seen from Brooklyn, with [Manhattan Bridge](https://en.wikipedia.org/wiki/Manhattan_Bridge) (partially hidden by buildings) seen in the background

To provide sufficient clearance for shipping in the East River, the Brooklyn Bridge incorporates long approach viaducts on either end to raise it from low ground on both shores.[[7]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._29-31-7) Including approaches, the Brooklyn Bridge is a total of 6,016 feet (1,834 m) long[[2]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NYCL-2)[[3]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Facts_on_File_1914_p._839-3)[[4]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Brooklyn_Citizen_Almanac_1893_p._165-4) when measured between the curbs at [Park Row](https://en.wikipedia.org/wiki/Park_Row_(Manhattan)) in Manhattan and Sands Street in Brooklyn.[[4]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Brooklyn_Citizen_Almanac_1893_p._165-4) A separate measurement of 5,989 feet (1,825 m) is sometimes given; this is the distance from the curb at [Centre Street](https://en.wikipedia.org/wiki/Centre_Street_(Manhattan)) in Manhattan.[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5)[[6]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Barnes_p._28-6)[[7]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._29-31-7)

**Suspension span**[[edit](https://en.wikipedia.org/w/index.php?title=Brooklyn_Bridge&action=edit&section=3" \o "Edit section: Suspension span)]

The main span between the two suspension towers is 1,595.5 feet (486.3 m) long and 85 feet (26 m) wide.[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5)[[6]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Barnes_p._28-6)[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-tribune19220729-9) The bridge "elongates and contracts between the extremes of temperature from 14 to 16 inches".[[17]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-19) Navigational clearance is 127 ft (38.7 m) above [mean high water](https://en.wikipedia.org/wiki/Mean_High_Water) (MHW).[[9]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NOAA-10) A 1909 [*Engineering Magazine*](https://en.wikipedia.org/wiki/Engineering_Magazine) article said that, at the center of the span, the height above MHW could fluctuate by more than 9 feet (2.7 m) due to temperature and traffic loads, while more rigid spans had a lower maximum [deflection](https://en.wikipedia.org/wiki/Deflection_(engineering)).[[18]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-20)

The side spans, between each suspension tower and each side's suspension anchorages, are 930 feet (280 m) long.[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5)[[6]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Barnes_p._28-6) At the time of construction, engineers had not yet discovered the [aerodynamics](https://en.wikipedia.org/wiki/Aerodynamics) of bridge construction, and bridge designs were not tested in [wind tunnels](https://en.wikipedia.org/wiki/Wind_tunnel). It was coincidental that the open truss structure supporting the deck is, by its nature, subject to fewer aerodynamic problems. This is because John Roebling designed the Brooklyn Bridge's truss system to be six to eight times as strong as he thought it needed to be.[[19]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Talbot_p._4-21)[[20]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-22) However, due to a supplier's fraudulent substitution of inferior-quality cable in the initial construction, the bridge was reappraised at the time as being only four times as strong as necessary.[[19]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Talbot_p._4-21)[[21]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19860308-23)

The main span and side spans are supported by a structure containing six [trusses](https://en.wikipedia.org/wiki/Truss) running parallel to the roadway,[[22]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-24) each of which is 33 feet (10 m) deep.[[23]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Langmead_2009_p._56-25)[[24]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-concise-description-26) The trusses allow the Brooklyn Bridge to hold a total load of 18,700 short tons (16,700 long tons), a design consideration from when it originally carried heavier elevated trains.[[7]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-McCullough_pp._29-31-7)[[25]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-27) These trusses are held up by suspender ropes, which hang downward from each of the four main cables. Crossbeams run between the trusses at the top, and diagonal and vertical stiffening beams run on the outside and inside of each roadway.[[23]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Langmead_2009_p._56-25)[[24]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-concise-description-26)

An elevated pedestrian and cycling promenade runs in between the two roadways and 18 feet (5.5 m) above them.[[26]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nyt19850816-28) It typically runs 4 feet (1.2 m) below the level of the crossbeams,[[27]](https://en.wikipedia.org/wiki/Brooklyn_Bridge" \l "cite_note-BBPr_p._26-27-29) except at the areas surrounding each tower. Here, the promenade rises to just above the level of the crossbeams, connecting to a balcony that slightly overhangs the two roadways.[[28]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-30) The path is generally 10 to 17 feet (3.0 to 5.2 m) wide.[[29]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-amny20160809-31)[[27]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-BBPr_p._26-27-29) The iron railings were produced by [Janes & Kirtland](https://en.wikipedia.org/wiki/Adrian_Janes), a Bronx iron foundry that also made the [United States Capitol dome](https://en.wikipedia.org/wiki/United_States_Capitol_dome) and the [Bow Bridge](https://en.wikipedia.org/wiki/Bow_Bridge_(Central_Park)) in [Central Park](https://en.wikipedia.org/wiki/Central_Park).[[30]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-32)[[31]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-33)

|  |  |
| --- | --- |
| **Brooklyn Bridge** | |
| [View of the Brooklyn Bridge from Manhattan; the East River is in the foreground](https://en.wikipedia.org/wiki/File:Brooklyn_Bridge_Manhattan.jpg)  View from Manhattan | |
| [**Coordinates**](https://en.wikipedia.org/wiki/Geographic_coordinate_system) | https://upload.wikimedia.org/wikipedia/commons/thumb/5/55/WMA_button2b.png/17px-WMA_button2b.png[40.7057°N 73.9964°W](https://geohack.toolforge.org/geohack.php?pagename=Brooklyn_Bridge&params=40.7057_N_73.9964_W_type:landmark_region:US-NY)[Coordinates](https://en.wikipedia.org/wiki/Geographic_coordinate_system): https://upload.wikimedia.org/wikipedia/commons/thumb/5/55/WMA_button2b.png/17px-WMA_button2b.png[40.7057°N 73.9964°W](https://geohack.toolforge.org/geohack.php?pagename=Brooklyn_Bridge&params=40.7057_N_73.9964_W_type:landmark_region:US-NY) |
| **Carries** | 5 lanes of [roadway](https://en.wikipedia.org/wiki/Roadway) (cars only) [Elevated trains](https://en.wikipedia.org/wiki/Elevated_railway) (until 1944) [Streetcars](https://en.wikipedia.org/wiki/Streetcar) (until 1950) Pedestrians and bicycles |
| **Crosses** | [East River](https://en.wikipedia.org/wiki/East_River) |
| **Locale** | [New York City](https://en.wikipedia.org/wiki/New_York_City) ([Civic Center](https://en.wikipedia.org/wiki/Civic_Center,_Manhattan), [Manhattan](https://en.wikipedia.org/wiki/Manhattan) – [Dumbo](https://en.wikipedia.org/wiki/Dumbo,_Brooklyn)/[Brooklyn Heights](https://en.wikipedia.org/wiki/Brooklyn_Heights), [Brooklyn](https://en.wikipedia.org/wiki/Brooklyn)) |
| **Maintained by** | [New York City Department of Transportation](https://en.wikipedia.org/wiki/New_York_City_Department_of_Transportation) |
| [**ID number**](https://en.wikipedia.org/wiki/National_Bridge_Inventory#ID_numbers) | 22400119[[1]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-1) |
| **Characteristics** | |
| **Design** | [Suspension](https://en.wikipedia.org/wiki/Suspension_bridge)/[Cable-stay](https://en.wikipedia.org/wiki/Cable-stayed_bridge) Hybrid |
| **Total length** | 6,016 ft (1,833.7 m; 1.1 mi)[[a]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-length-8) |
| **Width** | 85 ft (25.9 m)[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5)[[6]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Barnes_p._28-6)[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-tribune19220729-9) |
| **Height** | 272 ft (82.9 m) (towers)[[3]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Facts_on_File_1914_p._839-3) |
| **Longest span** | 1,595.5 ft (486.3 m)[[5]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NRHI_Nomination_Form_p._2-5)[[6]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-Barnes_p._28-6)[[8]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-tribune19220729-9) |
| [**Clearance below**](https://en.wikipedia.org/wiki/Air_draft#Clearance_below) | 127 ft (38.7 m) above mean high water[[9]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NOAA-10) |
| **History** | |
| **Designer** | [John Augustus Roebling](https://en.wikipedia.org/wiki/John_Augustus_Roebling) |
| **Constructed by** | New York Bridge Company |
| **Opened** | May 24, 1883; 138 years ago[[10]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-11) |
| **Statistics** | |
| [**Daily traffic**](https://en.wikipedia.org/wiki/Annual_average_daily_traffic) | 105,679 (2016)[[11]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-12) |
| **Toll** | Free both ways |
|  | |
| **Brooklyn Bridge** | |
| [U.S. National Register of Historic Places](https://en.wikipedia.org/wiki/National_Register_of_Historic_Places) | |
| [U.S. National Historic Landmark](https://en.wikipedia.org/wiki/National_Historic_Landmark) | |
| [NYC Landmark](https://en.wikipedia.org/wiki/New_York_City_Landmarks_Preservation_Commission) No. 0098 | |
| **Built** | 1869-1883 |
| **Architectural style** | [neo-Gothic](https://en.wikipedia.org/wiki/Neo-Gothic) |
| **NRHP reference No.** | [66000523](https://npgallery.nps.gov/AssetDetail/NRIS/66000523) |
| **NYCL No.** | 0098 |
| **Significant dates** | |
| **Added to NRHP** | October 15, 1966[[12]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nris-13) |
| **Designated NHL** | January 29, 1964[[13]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-nhlsum-14) |
| **Designated NYCL** | August 24, 1967[[2]](https://en.wikipedia.org/wiki/Brooklyn_Bridge#cite_note-NYCL-2) |
| **Location** | |
| [https://maps.wikimedia.org/img/osm-intl,10,40.7057,-73.9964,270x200.png?lang=en&domain=en.wikipedia.org&title=Brooklyn+Bridge&groups=_f68d404370855ef07dfae9c01393872b18af7b5b](https://en.wikipedia.org/wiki/Brooklyn_Bridge#/map/0) | |