

# Brooklyn Bridge Walk (from Brooklyn to Manhattan)

## Introduction

Hi, I'm Katherine with Free Tours by Foot, here to guide you across the Brooklyn Bridge, one of New York city's most loved landmarks.

Our tour will begin on the Brooklyn side of the bridge, where step one is on your map. The closest subway station is for the A + C Trains at High Street/Brooklyn Bridge Station.

As you head on to the path be aware of the markings on the sidewalk. The path is shared by pedestrians and cyclists. So, make sure you stay on the correct side.

The path is 1.1 miles or 1.6 kilometers across. This walk should take you anywhere from 30 minutes to one hour to complete, depending on your pace and how long you spend enjoying the views.

As you go, there will be some images synced with the audio. There will also be some walk and talk sections meant for you to listen as you make your way across the bridge.

Now begin walking as you listen to a brief history of the Brooklyn Bridge. This should take you to point three on your map.

## Brief History of the Bridge (Walk and Listen)

The Brooklyn Bridge was considered the greatest engineering marvel of its time. Today, it is one of the most visited destinations in New York City and is crossed by thousands daily. This bridge took fourteen years to complete, from 1869 to 1883, and was eagerly awaited.

At the time, New York and Brooklyn were independent cities, the first and 4th-largest in the US respectively. A large percentage of Brooklyn resident's worked in New York City. The only way to commute was via the east river. By the mid-19th century, ferries made over 1,000 trips a day, shuttling commuters back and forth.

A great bridge was needed to provide better linkage between the two cities. This presented a challenge. The best type of bridge would be a suspension bridge high enough to allow ships to pass under, accommodating New York's bustling maritime trade. The span to be crossed was 50% longer than the longest existing suspension bridge at the time.

During this era, many suspension bridges were collapsing. German-born engineer John Augustus Roebling was selected for the project. He had become known for his work building this particular type of bridge. He began work on the design in 1867.

In 1869, just before construction began, Roebling was making last-minute tweaks at the Fulton Ferry Landing in Brooklyn. His foot was crushed against the pier by an incoming ferry, which led

to some of his toes being amputated. He refused any further medical treatment, preferring instead to treat himself using water therapy.

This was unsuccessful and he died of tetanus about three weeks later. His son, Washington Roebling, became chief engineer and John Roebling never got to see his great bridge completed.

The bridge took 14 years, 600 workers, and \$15,000,000, which would be close to \$400 million today. The bridge was built mainly of steel, with the two towers constructed of granite.

At 276 feet or 84 meters, the towers were taller than most buildings in New York City at the time, only the spire of Trinity church was taller. The span over the river is 1,595 feet or 486 meters. The total length of the bridge is 5,989 feet or 1,825.4 meters.

Opening day in May of 1883 was a massive celebration. Presided over by President Chester A. Arthur and the governor of New York state, Grover Cleveland. Over 150,000 people crossed the bridge the first day. For most, the pedestrian path you are now on was the highest they have ever been in their lives.

## **Brooklyn Anchorage**

You are now standing over the Brooklyn Anchorage. Like the Manhattan Anchorage, this not only anchors the great bridge cables but also contains massive spaces within.

The Brooklyn side contains eight large rooms with 50-foot or 15.24-meter Cathedral-type ceilings. These rooms are done in the same gothic style as the bridge and were envisioned by the Roeblings to be a shopping arcade, once again, in hopes that the rents would help cover the cost of the bridge.

Though the shopping arcade never came to be, the spaces were used throughout the years primarily as municipal storage but also occasionally for art exhibitions and other events such as parties and concerts. In 2001, the Brooklyn Anchorage was officially closed to the public for security reasons.

Listen to the next clip as you walk to the next point on your map.

## **Jumbo the Elephant (Walk and Listen)**

When the bridge first opened, many people enjoyed walking the promenade exactly like you are doing now. Because this bridge was unlike anything anyone had ever seen, there were concerns amongst the public regarding the stability of the bridge.

One week after opening, on Memorial Day 1883, about 20,000 people were out on the bridge. A panic spread, fueled by an unfounded rumor that the bridge was about to collapse. As people stampeded towards the exits, 12 people were crushed to death.

Despite the rumors turning out to be false, people continued to have concerns about the stability of the bridge.

In 1884, the great showman, PT Barnum came to town. He decided that he could help squash any concerns about the Brooklyn Bridge and publicize his circus at the same time. He led a parade of 21 circus elephants, headed up by the famous Jumbo across the bridge, proving once and for all that it was safe.

As you continue walking, you will be able to see DUMBO to your left. This neighborhood name stands for Down Under the Manhattan Bridge Overpass. This was once an industrial area. The brillo pad and the cardboard box were invented here. In spite of the area's commercial roots, it is now one of the most desirable residential neighborhoods in the city.

You will also be able to see the beautiful Jane's Carousel down by the water. This 48-horse carousel was originally built in 1922 and was in Youngstown, Ohio. In 1984, David Walentas, the developer from most of this area, purchased the carousel at auction.

It was badly in need of repair, which was overseen by his artist wife, Jane. It was a painstaking process that took many years. The carousel was opened to the public in 2011.

Off to your right, you will be able to see Brooklyn Bridge park, built over the old Brooklyn waterfront piers and the Fulton Ferry Landing. You may see an east river ferry coming or going from there. This is a quick and fun way to get from we will finish your walk back to lower Manhattan.

Check at the Fulton Ferry Landing for the schedule. Before the great bridge was built, people were only able to cross by boat. The ferry trip across the river was commemorated by the great American poet, Walt Whitman. His poem, *Crossing Brooklyn Ferry*, was a part of his *Leaves of Grass* collection and describes crossing the river a little before sunset.

A portion of the poem is inscribed on a plaque at the Fulton Ferry Landing today. Whitman became known for his poetry. Prior to *Leaves of Grass* being published, he worked as an editor for the Brooklyn Eagle, a daily newspaper that existed for 114 years.

When Walt Whitman was the editor, the paper was headquartered in a building near the Fulton Ferry Landing. Look for the red brick building with Eagle Warehouse written on it at 28 Old Fulton Street.

## **The Cables (Walk and Listen)**

You can now see the impressive and iconic cables that help support this bridge. The Brooklyn Bridge was notable for many reasons when it was built. One of them was that this was the first major steel suspension bridge in the world.

The four main cables that you see, two running down the center, one down each side, actually contain over 5,000 steel wires inside the cable. Each of these is nearly 16 inches in diameter and is 3,578.5 feet in length. Over 1,000 smaller cables attach these to the deck.

If you laid all of the wires on the bridge ends to end, it would reach 14,000 miles or 22,000 kilometers, long enough to go back and forth to the Golden Gate Bridge in San Francisco, twice.

Steel cable was not a widely used material at the time, but John Roebling called it the Metal of the Future. The city took a big risk in approving a steel cable bridge and trusting that it would be more successful than the traditional rope suspension bridges.

Though the Roeblings own the steel cable company, the bid for supplying wires for the Brooklyn Bridge went to another company based in Brooklyn. Later on, Washington Roebling discovered

that this company was sometimes delivering wire that had not passed inspection and was made using an inferior process.

Because this faulty wire was already within the bridge cables, it had to remain there. To compensate, he ordered that 150 good steel wires be added to each cable. These did lead to diminished strength though.

John Roebling originally planned for the bridge to be six times stronger than needed. Because of the faulty wire, they did not get there. Don't worry, you're safe. The bridge is now considered four times as strong as needed.

Getting the four main cables into place was an impressive feat in and of itself. Rather than moving the unwieldy cables from a factory to the bridge site, they recreated right there. A traveler rope was used to move the wires strand by strand from anchor to anchor.

No small feat, considering it is 331 wires to strand and 19 strands per cable. Workers would then travel along the cables to bind them together. This process to complete the great cables took a year and a half.

Finding workers willing to work high above the water spinning cable was difficult. The company ended up searching for sailors, who were used to working high up on rigging on ships.

Now, begin walking towards the first bridge tower while you listen to this next section.

Feel free to pause after listening to the impressive tower stats. Then resume listening once you're under the tower.

## **The Towers and Caissons (Walk and Listen)**

Remember, when the bridge was completed, only Trinity Church stood higher than these towers in New York City. Roebling chose to do these towers in the gothic style with the dramatic arches we're calling cathedral windows. Most of the largest buildings in the world at that time were Gothic churches. The height of this tower from the water is 276.5 feet or 84.3 meters. The height from the promenade to the top is 117 feet or 35.6 meters.

For people walking on this bridge in the 1880s, being up here was equal parts exhilarating and terrifying, it would be similar to the modern experience of going to the Empire State Building or One World Observatory.

One of the many challenges of building the Brooklyn Bridge was getting the two bridge tower foundations set on the bedrock underneath the East River. To do this, the riverbed was excavated inside massive wooden structures called caissons. These caissons were made of southern yellow pine and looked like a box with no bottom. These airtight caissons were pinned down to the riverbed with granite blocks and pressurized air was pumped in to keep water and debris out. Picture holding a bucket upside down in a bathtub, as long as you keep the pressure on it, the air will stay trapped and the water will stay out. This is how the caissons were used during construction.

They were massive structures. Each caisson could've contained four tennis courts. Workers were sent into these caissons to dig out the sand and sediment, inching their way down to bedrock. These workers, mainly immigrants, were known as sandhogs and earned about \$2 a day.

Bedrock was found 44 feet down on the Brooklyn side, but because of a slope in the riverbed, it was 78 feet down on the Manhattan side. Rather than digging down, Washington Roebling determined that the aggregate over the bedrock was sturdy enough.

To this day, the Manhattan Tower is not actually on bedrock. Check out the accompanying images to see what caissons looked like.

Working in caissons was hot and uncomfortable, but the journey in and out of the caissons was downright dangerous. Workers rode in small iron containers called air-locks. As they descended, it was filled with compressed air. This allowed workers to be in the caissons but also dissolved high levels of gas into their bloodstream.

When they returned to the surface, the gas would be quickly released. This led to a wide array of symptoms, including joint pain, numbness, convulsions, and in some cases, death. This became known as caisson's disease or the bends.

Of the nearly 600 workers who built the Brooklyn Bridge, over 100 suffered from caisson's disease. There were 27 total deaths as a result of the bridge. While some were more common construction accidents, several were as a result of caisson's disease.

Later, scientists would discover that by having the air-locks return to the surface more gradually, workers' bodies had more time to adjust to the decompression, and caisson's disease could be avoided.

## **Emily Roebling**

On the Brooklyn Tower, you will see a large plaque dedicated to Emily Warren Roebling, honoring her contributions to the bridge.

Construction was long and difficult. The project would ultimately cause the deaths of 27 people including the original chief engineer, John Roebling. Many others suffered terrible physical effects usually because of the bends or caissons disease.

One of the people stricken was Washington Roebling, the second chief engineer who had taken over for his father at the age of 32. He suffered from partial paralysis due to his work in the caissons shortly after the project began. This left him bedridden and only able to supervise the work through a telescope from his home in Brooklyn Heights.

His wife, Emily Warren Roebling, then stepped up and took over his on-site duties until the bridge was completed. Though Emily had no formal training, she developed an extensive knowledge of cable constructions, stress analysis, strength of materials, and higher mathematics. She had developed an interest in the field earlier. She and Washington had actually spent their honeymoon in Europe studying the use of caissons in buildings.

For nearly 14 years, Emily Warren Roebling served as a go-between for her husband, eventually taking over most of the duties of chief engineer on-site. Though Washington was always officially listed as the chief engineer, Emily's contributions were invaluable and the bridge would not have happened without her.

She was the first to cross the bridge by carriage and she did so with a live rooster on her lap as a symbol of victory. She was honored with a speech at the opening, saying the bridge was an everlasting monument to the sacrifice and devotion of a woman and of her capacity for that higher education from which she has been too long disbarred.

Emily Warren Roebling never worked as an engineer again, but she did continue her education and received a law degree from New York University.

## Steve Brodie (Walk and Listen)

Most people come up here for the nice walk and beautiful views, but this bridge has definitely brought out the daredevil in people.

Just two years after the bridge opened, a swimming instructor named Robert Adlam attempted a jump off of the bridge but was killed. Just a year later, Steve Brodie made the same 135-foot or 41.1-meter jump and survived. This made Brodie an instant celebrity.

Accounts varied, some reported that this was done to win a bet. Some said it was to gain financial backing for a saloon.

Skepticism about his jump started immediately after and continues to this day. Many say that a dummy was thrown from the bridge and Brodie just got into the water from a rowboat.

Whether he jumped or not, Brodie was famous. He opened a tavern that also served as a museum to his crazy stunt. He also found success as a performer and even had his tale turned into a film.

The phrase, "Pulling a Brody," came to mean attempting a dangerous stunt.

## Middle of the Bridge

This is one of the most beautiful spots on the bridge with 360° views of the city and the harbor. There is a bench here if you want to sit and relax for a minute.

Looking back at Manhattan, you will see all of Lower Manhattan off to your left and you can see all the way to Midtown on your right. See if you can pick out the Empire State Building and the Chrysler Building with their unique Art Deco tops.

If you look straight out into the harbor, you will see [Governor's Island](#) straight ahead. When the Dutch arrived in this area in 1624, they first landed on that spot which they called Nut Island. The current name was coined during the British colonial period when it was reserved for the exclusive use of the royal governor of New York.

From 1783 to 1966, the island was used as a US Army Post, and from 1966 to 1996, it was used by the Coast Guard.

In 2003, 150 of the island's 172 acres were sold to the state and city of New York for \$1. The remaining 22 acres are Governor's Island National Monument, administered by the National Park Service.

You should also be able to see the [Statue of Liberty](#) out in the harbor. The statue's official name is Liberty Enlightening the World. It was a gift from the people of France and was dedicated in 1886. Today, it is one of the best-known icons of New York City and visited by

millions every year. The statue is made of a very thin hammered copper over an inner steel skeleton. The copper is just three millimeters thick.

You may see an orange ferry crossing the harbor. This is the [Staten Island Ferry](#), a commuter ferry that makes regular trips between Lower Manhattan and Staten Island. It can be a great option for seeing the Statue of Liberty a little closer up and it's free. It takes approximately one hour to make the trip to Staten Island and back.

## **Manhattan Bridge (Walk and Listen)**

As you are walking, you will see the Manhattan Bridge off to your left. The Manhattan Bridge was completed in 1912 and at 6,855 feet or 2,089 meters, it is slightly longer than the Brooklyn Bridge.

It was also considered an innovation in design for its use of new truss designs and engineering principles. For those reasons, it is considered a model for several of the long-span suspension bridges built in the 20th century such as the Golden Gate Bridge in San Francisco and the Verrazano-Narrows Bridge right here in New York City.

The Williamsburg Bridge is farther up the East River and connects the Manhattan neighborhood of the Lower East Side and Williamsburg, Brooklyn. When it was opened in 1903, it was the longest suspension bridge in the world at 7,308 feet, 2,227 meters. It kept that status until the Bear Mountain Bridge about 50 miles upstate was completed in 1924.

## **South Street Seaport + East River**

You are now close to Manhattan's edge. You will see the South Street Seaport off to your left.

The seaport is a visible reminder of this area's rich maritime history. The first pier in the area was built in 1625 by the Dutch West India Company and the area continued to build up for many years.

From the late 18th to the mid 19th century, New York had the country's largest system of maritime trade. The Empress of China, the first ship to do a trade route between China and the United States, left from the Seaport in 1784. Transatlantic shipping and passenger lines continued to flourish and New York became a center for world trade.

By the early 20th century, however, this port became too shallow for the newer larger ships. Many ships begin docking appears over on the west side of Manhattan instead.

In 1967, the South Street Seaport Museum opened, dedicated to preserving New York's early maritime history. The museum today features interactive exhibits, working replicas of seaport businesses, and guided tours of 1885 cargo ship, Wavertree and 1907 lightship, Ambrose.

[Check out the link for our self-guided seaport tour.](#)

If you look back from here at Lower Manhattan, you will be able to see 40 Wall Street and the AIG building. When 40 Wall Street, pointed out in the photo with the green roof, was first

built for Bank of Manhattan, it was the tallest building in the world. The title was quickly snatched, however, when the spire was added to the Chrysler Building in Midtown. 40 Wall Street is currently owned by Donald Trump.

The nearby skyscraper with the shiny steel spire is 70 Pine Street, the former headquarters of AIG. This was the third tallest building in the world upon completion and was the tallest building in Lower Manhattan until the Twin Towers were completed in the 1970s.

## Anchorage

Right underneath the bridge where Pearl Street crosses, there is a bronze plaque marking the site of the Samuel Osgood House.

When George Washington arrived in New York City, one week ahead of his inauguration in 1790, Congress rented the house from Osgood as the first presidential mansion. The rent for one year was \$845.

Samuel Fraunces, the owner of the nearby Fraunces Tavern, ran the household and managed the staff of 20. In addition to Washington's living quarters, the house contained his private office and the public business office. Even though the rent was paid for one year, Washington moved 10 months later to a larger house on Broadway.

The Osgood House stood until 1856 when it was demolished, years before the anchorages for the Brooklyn Bridge were put into place. Though the Osgood House was long gone, problems arose during the construction of the bridge regarding what to do with the businesses that stood in the path of the planned anchorages.

On the site of the planned Manhattan Anchorage was Luties and Company, which was a liquor distributor and on the Brooklyn side was Racky's Wine Company. Chief engineer Washington Roebling saw an opportunity to help offset the massive construction costs that were accruing.

The anchorages could contain a wine cellar on each shore. Other chambers were created, with the idea that they could be rented out to other local businesses and bring in income. The plan worked out well and money came in for about 40 years.

As strange as it seems, these vaults were an ideal spot to store wine. They were dark, consistently cool, and could keep even the most delicate older wines.

Prohibition led to the disuse of the vaults but they briefly reopened beginning with a grand celebration on July 11th, 1934. Later, after World War II, the city took over management of the cellars and the wine era of the Brooklyn Bridge was over.

The sellers in the anchorage were later used for a much darker purpose. The Manhattan side vault, during a routine inspection in 2006, was revealed to be a cold war-era bomb shelter, packed with emergency supplies including food rations, water, blankets, and shock medication, all placed there in case of a nuclear attack on New York City. ([video of inside the bunker](#))

The dates stamped on the boxes coincide with the year the Soviet Union launched Sputnik, 1957, and the year of the Cuban Missile Crisis, 1962. Clearly tense times in this city.

These anchorages are walked over by thousands of people every day but very few know of their rich history. The actual purpose of these structures was not really wine storage or emergency bunkers but to anchor the great bridge cables.

The cables were carefully strung across the bridge and secured here using 60,000 tons of granite.

## **Notable Buildings (Walk + Listen)**

From point three on your map, you can look back at Lower Manhattan and see several iconic buildings.

One is the residential tower, 8 Spruce Street, currently marketed as New York by Gehry, a reference to the building's architect, Frank Gehry. This building has a public elementary school on the ground floor and 904 rental units above. The building was the tallest residential building in the Western Hemisphere when it was completed in 2011, but has since been passed by 432 Park Avenue in Midtown.

The tower with the large spire is One World Trade Center, the main tower of the New World Trade Center. It is 1,776 feet tall and it's the tallest building in the Western Hemisphere. The height is in honor of 1776, the year the United States declared independence.

The building has been nicknamed The Freedom Tower and is 104 stories tall. As of 2015, it is home to One World Observatory, the highest observation deck in the city.

From here, you can also see the famous Woolworth Building. When this 57 story building was opened in 1913, it was the tallest in the world. It was designed by Cass Gilbert and was owned by the FW Woolworth Company, serving as their corporate headquarters. The building was nicknamed The Cathedral of Commerce and was the tallest in the world until 40 Wall Street was completed in 1930.

The beautiful building with the gold statue on top is the Municipal Building. The building was constructed to meet the need for more government space after the consolidation of The Five Boroughs in 1898. The building was constructed from 1907 to 1914. William Kendall of the firm Mead, McKim & White designed the building, and it was the first building to incorporate a subway station into its base.

The building's wedding-cake shape at the top is appropriate. For many years, the office of the city clerk performed City Hall weddings inside the building.

## **The End**