



# Zoom

in on america

May 2014

A Monthly Publication of the U.S. Consulate Krakow

Volume X. Issue 116



A supermoon sets behind the Statue of Liberty. Photo © AP Images

In this issue: How Innovators Built New York's Landmarks Zoom in on America

# THE EMPIRE STATE BUILDING

For over 40 years after its construction, the Empire State Building was the tallest building in the world. It lost that distinction in 1973 when the World Trade Center was completed. While no longer the tallest building in the world, the Empire State Building still is one of the world's most recognizable buildings. It also is a symbol of the technological innovation that helped to drive New York's development as a modern mega-city.

Construction of the Empire State Building began on March 17, 1930. The architects who designed the building and the company charged with constructing it wanted not just to build the world's tallest building. They also wanted to complete the construction with record speed and efficiency. As many as 3,000 men (mostly immigrants from Europe, along with hundreds of Mohawk ironworkers) worked on the building at one time. With the innovative usage of ready-made parts of the building, the framework rose at a rate of 4 ½ stories per week. The masonry work, which began in June 1930, was completed on November 13 that

same year. A total of 60,000 tons of steel and 10 million bricks were used in the construction. The Empire State Building weighs a total of 365,000 tons. More than 200 reinforced concrete columns were used to support it firmly on the ground.

On May 1, 1931, slightly over one year after the construction works began, President Hoover pressed a button in Washington, DC, which turned on the Empire State Building's lights and officially opened the building. The height of the Empire State Building is 1,250 feet (381 meters) at the 102nd floor. Above this floor there is a 203 foot (62 meter) pinnacle, which makes the full height of the building 1,453 feet and 89/16 inches (443.09 meters). The first 85 stories of the building are used for commercial and office space. On the 86th floor there are two observation decks: one indoor and one outdoor. The remaining 16 stories of the building are the Art Deco tower, which is capped by the observatory on the 102nd story. The pinnacle is covered by broadcast antennas, with a lightning rod at the very top.

*In a Nutshell*

<b>Architectural style:</b>	Art Deco
<b>Height:</b>	1,250 feet (381 meters)
<b>Location:</b>	New York City, Manhattan, 5th Avenue no. 350
<b>Observatories:</b>	86th floor (outdoor and indoor) and 102nd floor (indoor)
<b>Visitors:</b>	4 million people annually
<b>Special:</b>	Every Valentine's Day couples marry on the 80th floor



*The tip of the Empire State Building peeks through thick fog. Photo © AP Images*

# THE STATUE OF LIBERTY

The Statue of Liberty was a gift of the French people to the United States. French sculptor Frédéric Auguste Bartholdi designed and built the statue. Bartholdi worked on the Statue of Liberty for over 20 years in his studio in Paris. He used four scale models of the statue, the biggest of which was  $\frac{1}{4}$  the size of the actual statue. The model was then divided into 300 parts and enlarged to actual size. For each of these 300 parts, Bartholdi made laminated wood forms. Copper sheets were then shaped using the forms. Finally, he connected 350 parts to steel frames that behave like springs. The flexibility of these “springs” helps to protect the Statue of Liberty during strong winds. When they were ready, all of the Statue’s parts were transported to New York in 214 wooden crates. In June 1885 the parts were assembled on a steel frame with rivets.

sign an iron pillar for the Statue and a secondary skeletal framework for the copper sheeting. The copper cover is supported on iron bars which were assembled on the main pillar. The pillar also connects the 225-ton statue with the pedestal. The statue is 93 meters tall. Bartholdi modeled the face of the statue on his mother. The 7 rays that come from the Liberty’s crown symbolize the 7 seas and 7 continents.

The Statue is located on Liberty Island in New York. President Grover Cleveland performed the ribbon cutting ceremony on October 28, 1886. On its 100th anniversary the Statue of Liberty was renovated and given a new torch. The flame on the Statue’s torch is now covered with a layer of gold.

Gustav Eiffel, most famous for designing the Eiffel Tower in Paris that bears his name, was commissioned to de-

*In a Nutshell*

<b>Material:</b>	copper 3/32in. (about 2.5mm) thick
<b>Height:</b>	305 ft, 1in. (93m) from the ground to the tip of the flame
<b>Location:</b>	Liberty Island, New York
<b>Visiting inside area:</b>	the Crown
<b>Visitors:</b>	4 million people annually
<b>Special:</b>	Inscription on the tablet is: July 4, 1776 (American Independence). The date is written in Roman numerals and reads July IV MDCCLXXVI



*The Statue of Liberty stands against a clear sky. Photo © AP Images*

# THE BROOKLYN BRIDGE

The Brooklyn Bridge, still in use today, was a modern engineering marvel at the time of its construction in the second half of the 19th century. John Roebling designed the 1,600-foot bridge across the East River in 1867. Construction of the bridge lasted 16 years and cost the lives of 20 people, including Roebling himself. Roebling died as a result of an accident in which a ferry crushed his foot. Most of the others died as a result of decompression sickness, also called caisson disease.

Washington Roebling, John Roebling's son, became project engineer after his father died but he himself became incapacitated by caisson disease. After becoming sick he continued to direct construction of the bridge through his wife, Emily, who studied engineering in order to be able to help her husband. She was the first person to cross the completed bridge by carriage.

When it was finished in 1883, the Brooklyn Bridge was the longest suspension bridge in the world and the first such bridge made of steel. The bridge connected Manhattan and Brooklyn, which were two separate towns at the time. The bridge's two neo-Gothic towers, each 83 meters tall,

one in Brooklyn and the other in Manhattan, serve as the gates to these two boroughs of New York.

Several innovative techniques were used to construct the Brooklyn Bridge. One innovation was the use of steel-strand cables. Another innovation was the use of caissons in the construction process. Caissons are large wooden boxes with no bottoms that were placed in the river bed. The caissons served two purposes. First, they provided space for workers to dig out sand from the river bed. After caissons were towed into position, they were sunk and filled with compressed air to keep water out. Workers dug until they reached solid rock under the riverbed, and then they filled the caissons with concrete. Thus they made the foundation for the bridge. The towers of the Brooklyn Bridge were built atop caissons.

The Brooklyn Bridge remains an important part of New York's transportation network. It has a wide pedestrian walkway, which can be used also by cyclists. The pedestrian walkway is located in the center of the bridge and higher than the lanes for motor vehicles.

*In a Nutshell*

<b>Architectural style:</b>	Piers follow Gothic style
<b>Length: end to end:</b>	5,989 feet, 1.13 miles (1.83 km)
<b>Location:</b>	Spans the East River between Manhattan and Brooklyn
<b>Users:</b>	120,000 vehicles, 4,000 pedestrians and 3,100 bicyclists cross the Brooklyn Bridge every day
<b>Special:</b>	Peregrine falcons nest atop the Brooklyn Bridge



Brooklyn Bridge Park, bottom, Brooklyn Bridge, center, and the Manhattan Bridge, right, are shown in this aerial photo of the East River, Manhattan, top, and Brooklyn, bottom. Photo © AP Images

# GRAND CENTRAL TERMINAL

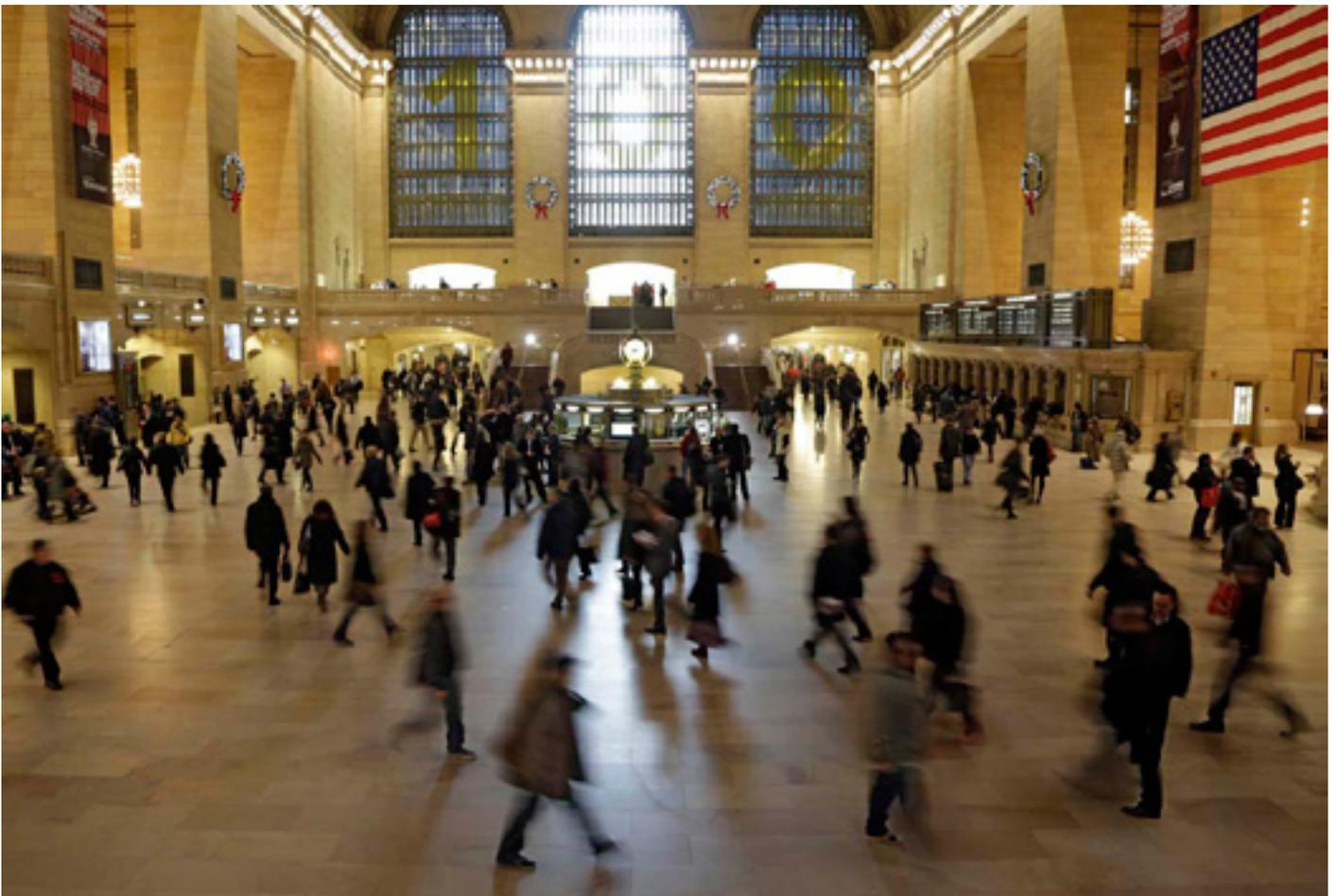
Grand Central Terminal in New York opened in 1913 after 10 years of construction. After a fatal train crash in 1902 in which 15 passengers died, city officials decided that a new rail station was needed to ensure passenger safety and to accommodate the increasing number of rail passengers. The New York Central Railroad's chief engineer, William J. Wilgus, came up with what was, at the time, a bold and visionary design for a new rail station that included train platforms on multiple levels. Traditional steam locomotives of the day produced lots of smoke and soot. In order to use platforms on multiple levels, steam locomotives had to be replaced by electric trains. The city accepted the design, demolished the old rail station that was on the spot, excavated earth in order to build bi-level platforms, and built a switch-and-signal tower to command the 32-mile maze of tracks in and out of the station. In total, the new Grand Central Terminal included 46 sets of train tracks and 30 platforms.

Today, Grand Station Terminal is a favorite meeting place for New Yorkers and visitors. Its 44 platforms make it the largest rail facility in the world. And yet, plans for the expansion of Grand Central Terminal have already been drawn up and construction has begun on what is called the "East Side Access" project.

This expansion project is expected to be completed in 2019. It will connect to the Main and Port Washington lines of the Long Island Rail Road. It is a public-works project aimed to facilitate everyday commuting for more than 160,000 people. The new terminal will greatly reduce the commute times for passengers traveling from Queens and Long Island to Manhattan's East Side. The new concourse will be eight stories high. The construction site is located 16 stories below the station.

*In a Nutshell*

<b>Architectural style:</b>	Beaux-Arts architecture
<b>Area:</b>	47 acres (19 ha)
<b>Location:</b>	42nd Street and Park Avenue in Midtown Manhattan, NYC
<b>Visitors:</b>	750,000 visitors every day
<b>Special:</b>	The four-faced clock on the information booth is the most favorite meeting place for New Yorkers and visitors



*Passengers traverse the main hall of New York's Grand Central Terminal. Photo © AP Images*



*the Gehry building at Eight Spruce Street framed by the Brooklyn bridge in the foreground and the Woolworth building on the right in downtown New York. Photo © AP Images*

# Activity Page

Win a Prize!  
May 2014  
CONTEST

Where is the Statue of Liberty located?

Send the answer  
(with your home address) to:  
KrakowAIRC@state.gov

Deadline: June 15

Win a Prize!  
The answer to  
the April  
contest was:

April 1860-October 1861

The winners are:

Renata from Wodzislaw  
Slaski, Hector from Buenos Aires and Zbigniew from  
Zdunska Wola

CONGRATULATIONS!!!

The prizes will be sent to you  
by mail.



Zoom is online at  
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## EXERCISE 1

Reading comprehension. Read the descriptions of the four landmarks on pp. 1-6 and decide whether these sentences are true (T) or false (F):

1. The Empire State Building is the tallest building in the world.
2. Frédéric Auguste Bartholdi designed the construction of the Statue of Liberty.
3. The fatal crash of trains at Grand Central in 1902 sped up the plans to modernize it.
4. The Grand Central Terminal is the biggest train terminal in the world and it doesn't need to be expanded.
5. The Brooklyn Bridge connects the New York boroughs of Manhattan and Staten Island.
6. Caissons were used in the construction of skyscrapers.
7. There are two observation decks at the Empire State Building, on the 86th and on the 102nd floors.
8. The Statue of Liberty was assembled in Paris and transported to New York.

## EXERCISE 2

Reading for information. Scan-read the articles and the "In a nutshell" boxes and decide which landmark: The Empire State Building (1), The Statue of Liberty (2), The Brooklyn Bridge (3) or Grand Central Terminal (4) matches the sentences below. The sentence may include more than one landmark:

1. It is made of copper.
2. It was designed in the Art Deco style.
3. It is a landmark of New York.
4. It is visited by about 4 million people every year.
5. Its part is a tablet with the year of American Independence inscribed on it.
6. More than 120,000 people use it every day.
7. Rare birds make their nests on top of it.
8. It is a popular meeting place for New Yorkers and visitors.

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*New York's Empire State Building. Photo © AP Images*