

# Tower POWER



# Built as a gateway to the 1889 World's Fair, the Eiffel Tower was a symbol of defiance

BY EUGENE FINERMAN

**I**n travel posters and movies, the Eiffel Tower seems to define romance. Yet when the tower was constructed in the 1880s, it was an act of defiance. The world's tallest structure, composed of an intricate lattice of wrought iron, certainly refuted both the laws of gravity and the conventions of beauty. But more than that, the Eiffel Tower would proclaim to the world that France was not to be dismissed. If other countries now had greater armies or more extensive empires, France remained the cultural center of Europe.

A decade earlier, France was in ruins. In 1870, a French diplomat and a Prussian dignitary had an argument. The Prussian Crown demanded an apology, the French government refused, and the consequence was the Franco-Prussian War. France thought it would teach Prussia a lesson, but it was Prussia that had done all the studying. The German army was ready for war, the French simply for a parade. Within two months, the French army had been trapped and captured. Paris was besieged, enduring four months of bombardment and starvation before it surrendered. By the time the French asked for an armistice, they had lost 138,000 men; the German losses were 28,000 dead. The relative ease of its victories did not make Prussia more magnanimous. France was to be humiliated. The French provinces of Alsace and Lorraine were annexed by the German state. France was further

obliged to pay an indemnity—in gold—that was intended to cripple her economy; and until that indemnity was paid, German troops would occupy Northern France. Here, at least, the Germans underestimated France; the French raised the money in less than three years.

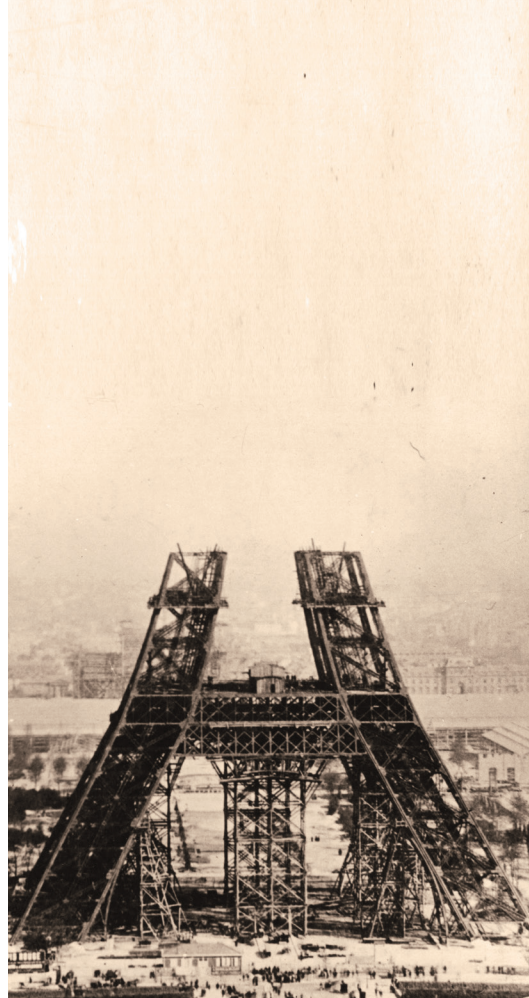


**Engineer Gustave Eiffel employed 40 draftsmen to produce a full-scale design of his tower.**

By the 1880s the French economy was flourishing, and Paris seemed more beautiful than ever. But the losses and humiliation could not be forgotten. On Paris' Montmartre, the highest elevation in the city, the basilica of Sacré Coeur was being built to commemorate France's dead. French pride demanded some form of vengeance, an affirmation

of the country's grandeur and greatness. In the past, Paris had been the site of several world's fairs—Expositions Universelles—and they had proved enjoyable and profitable. Why not another World's Fair, and this one a celebration of France herself! The French government would make this a priority. This Exposition would be in 1889, the centenary of the French Revolution. There was a certain Gallic gall in that choice of a theme. Most of Europe abhorred the idea of the French Revolution; it conjured images of the guillotine and memories of Napoleon. Yet, a World's Fair in Paris had an undeniable allure; commerce and entertainment would take precedence over politics.

But such an Exposition would require years of preparation and bold planning. In 1884, a government commission announced a competition to create a monument that would represent the spirit of the World's Fair. The challenge certainly piqued the interest of Gustave Eiffel (1832–1923), France's greatest engineer. His bridges spanned rivers in Bolivia, Hungary and Indo-China. He was the engineering consultant to the governments of Russia and Japan. The Statue of Liberty, France's gift to a fellow republic, was constructed on a framework designed by Eiffel. Given his worldwide commitments, Eiffel employed a staff of engineers, architects and draftsmen. In fact, it was one of his subordinates, an engineer named Maurice Koechlin, who first sketched a design of a unique tower.



Built on the Champs de Mars, the Eiffel Tower served as the gateway to the 1889 World's Fair. Construction, begun in early 1887, stretched over many months. These images capture the progress as it unfolded: March 15, 1888; May 10, 1888; October 14, 1888; and December 16, 1888. The final photo shows fairgoers walking under the completed tower's arched base in 1889.

There would be four giant columns of wrought iron, a strong but malleable metal. The columns would taper until, some 600 feet (183 meters) above ground, they would form one tower that would rise another 300 feet (91 meters). Their latticework structure would limit wind resistance, so it would be possible for the tower to reach an unprecedented height of 984 feet (300 meters). That would be twice as high as the Washington Monument, then the world's tallest building. Eiffel recognized the brilliance of Koechlin's proposal, and he applied the resources of his company into turning a sketch into a blueprint. Under Eiffel's supervision, 40 draftsmen worked on a full-scale design of the tower. There were to be 18,000 iron girders, beams and joists, each individually designed with a mathematical precision. Any deviation or miscalculation would threaten the

structure. The blueprints took up 5,000 sheets of drawing paper.

More than 100 designs were presented for the competition, but it proved to be no contest. On May 12, 1886, the Exposition Committee approved Eiffel's proposal. However,

receive all the proceeds from ticket sales during the Exposition and for the next 20 years. Eiffel agreed.

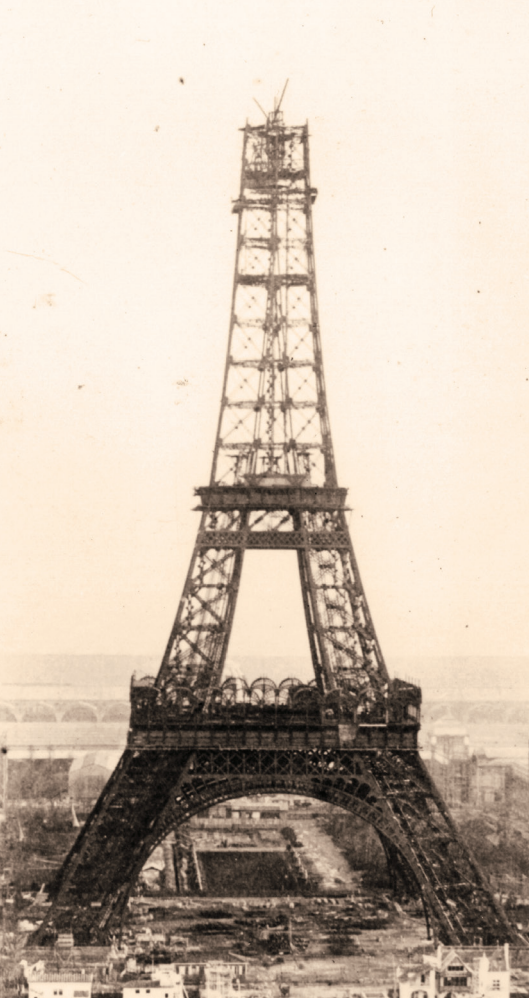
The tower would be built on the Champs de Mars and serve as the gateway to the Exposition. Construction began on January 22,

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there still were financial considerations. The committee had not anticipated the price of a masterpiece; Eiffel estimated a cost of 6 million francs (\$1 million then, \$25 million today). The government would pay a quarter of the expenses, but Eiffel had to raise the rest. However, his company would

1887. The foundations were laid 51 feet underground; that required the excavation of 1 million cubic feet of soil. By June the columns began to rise. Three hundred workers assembled the iron pieces in accordance with the meticulous plans. But the incomplete structure did not look





like a masterpiece. In an open letter to the Exposition Committee, some of France's leading artists and writers—including Guy de Maupassant and Charles Gounod—denounced the Tower:

*We come, writers, painters, sculptors, architects, passionate lovers of the beauty of Paris—a beauty until now unspoiled—to protest with all our might, with all our outrage, in the name of slighted French taste, in the name of threatened French art and history, against the erection, in the heart of our capital, of the useless and monstrous Eiffel Tower...*

*Listen to our plea! Imagine now a ridiculous tall tower dominating Paris like a gigantic black factory smokestack, crushing with its barbaric mass Notre Dame, Sainte Chapelle, the Tour Saint-Jacques, the Louvre, the dome of Les Invalides, the Arc de Triomphe, all our humiliated monuments, all our dwarfed architecture, which will be*

*annihilated by Eiffel's hideous fantasy. For twenty years, over the city of Paris still vibrant with the genius of so many centuries, we shall see, spreading out like a blot of ink, the shadow of this disgusting column of bolted tin.*

Gounod eventually conceded that he was wrong. Maupassant never did. And the construction continued. The Eiffel Tower was completed in March 1889 and formally opened on March 31. Ironically, the American-made elevators had yet to be installed, so anyone who wanted to get to the Tower's top had to climb 1,710 stairs. The prime minister of France declined, but Gustave Eiffel and a few hardy journalists made the 40-minute ascent. Once there, in sight of all Paris, Eiffel hoisted the flag of France. French cannons answered with a 20-gun salute.

The Exposition opened on May 6, and the Eiffel Tower was the gateway to 61,722 exhibits and shows. Visitors could see replicas of the Bastille, Javanese villages and an Egyptian

marketplace—with belly dancers. From America, there was Buffalo Bill and his Wild West Show; the sharpshooting Annie Oakley was the crowd favorite. Reflecting the latest advances in technology, the Fair was lit by electricity. With that added illumination, the Eiffel Tower stood as distinct in the night as it did in the day. Although the Exposition ended in October, tourists continued to flock to see the world's tallest building. In its first year, the Tower sold 1.9 million admissions. Gustave Eiffel recouped his entire investment in five months.

According to the original agreement, the Eiffel Tower was to have been torn down after 20 years. That clause was obviously revised. It remains, no longer the world's tallest structure but one of the world's most beloved landmarks. Today, more than 250 million visitors have ascended the Eiffel Tower.

In the 1880s, a wounded France sought a symbol of her greatness; the Eiffel Tower continues to prove it. ■