

# The Finest Building in America

THE NEW YORK  
Crystal Palace

1853-1858

EDWIN G. BURROWS





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Published in the United States of America by Oxford University Press  
198 Madison Avenue, New York, NY 10016, United States of America.

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Library of Congress Cataloging-in-Publication Data

Names: Burrows, Edwin G., 1943– author.

Title: The finest building in America : the New York Crystal Palace,  
1853–1858 / Edwin G. Burrows.

Description: New York : Oxford University Press, 2018.

Identifiers: LCCN 2017031341 | ISBN 9780190681210 (hardback)

Subjects: LCSH: Crystal Palace (New York, N.Y.) | New York Exhibition of the Industry of All Nations (1853–1854 : New York, N.Y.) | Glass construction—New York (State)—New York. | Lost architecture—New York (State)—New York. | New York (N.Y.)—Buildings, structures, etc. | New York (N.Y.)—History—1775–1865. | BISAC: HISTORY / General. | HISTORY / United States / State & Local / Middle Atlantic (DC, DE, MD, NJ, NY, PA).  
Classification: LCC NA6750.N5 B87 2018 | DDC 721/.0449609747—dc23 LC record available at <https://lcn.loc.gov/2017031341>

1 3 5 7 9 8 6 4 2  
Printed by CTPS, China

For Pat, Matt, & Kate



You have also seen our own New-York grow  
from a provincial town to a vast metropolis, heaving in its heart  
with the pulsations of a world, and wearing its  
Crystal Palace like a diadem.

*NEW-YORK DAILY TRIBUNE, MAY 5, 1854*



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## PROLOGUE

# The End

Around five o'clock in the afternoon of October 5, 1858, thick black smoke boiled out of a storeroom in the Crystal Palace on New York's Reservoir Square (now Bryant Park), an exhibition venue renowned throughout the United States for its pioneering use of iron and glass as well as for hosting the first American World's Fair. Moments later, witnesses saw a "sudden flash," after which flames began to flow like lava across the varnished pine floors of the interior galleries, curling up toward the building's central dome and "whirling round in terrible eddies." Panicked by cries of "Fire! Fire!" the several thousand visitors inside rushed for the exits, "crying and screaming in the most pitiable manner" while a giant steam calliope, oblivious to the pandemonium, pumped out "Pop

Goes the Weasel.” Women fainted and tumbled down flights of stairs. Parents lost track of their children. The aged and infirm were bowled over in the stampede. A quick-thinking engineer attempted to extinguish the flames by releasing the steam from some nearby boilers, while a few stalwart men grabbed the fire hoses attached to hydrants at strategic locations on the ground floor. But the steam proved insufficient, or the hoses were full of holes, or the water pressure was too low (explanations varied), and they were all soon driven back by heat so intense that cast-iron girders began snapping “like brittle glass.” Others reportedly took advantage of the confusion to make off with jewelry, watches, silverware, and other objects of value on display.<sup>1</sup>

Barely fifteen minutes after the initial alarm had been raised, flames enveloped the dome, throwing “great waves of lurid light” over a throng of spectators who had quickly filled the streets outside. Policemen from nearby precincts struggled to control the crowd, seizing a number of pickpockets in the bargain. The dome then collapsed with a “tremendous crash,” taking down the remainder of the roof and causing the outer walls to cave in. Inside half an hour the Crystal Palace had been reduced to a heap of smoldering debris. It was later found that a whirlwind created by the heat of the fire had swept pieces of the tin roof across the East River to Long Island, three miles away. George Templeton Strong, the diarist, raced to the scene and

watched “a majestic column of smoke” rise into the blue sky, “wreathing and flowing” downtown on the early evening breeze. As the sun set, the smoke floated over St. John’s Park, puzzling residents like the young Morgan Dix, the future rector of Trinity Church, who did not learn until the next day where it came from.<sup>2</sup>

Firemen allegedly pulled a corpse from the ruins that same evening, giving rise to somewhat hysterical predictions—fed by rumors of people who had gone missing in the melee—that more bodies would turn up. But none ever did. Subsequent investigation determined that there had been no corpse after all, and that by some miracle everyone had escaped the building without serious injury. Hundreds of workingmen, inventors, artists, and manufacturers exhibiting their work at the annual show of the American Institute were completely ruined nonetheless. Estimates of the loss in property exceeded one million dollars, equal in 2015 to as little as \$22 million and as much as \$4.4 *billion*.<sup>3</sup>

“The conflagration of the Crystal Palace was the great city fact,” observed the *Times* a couple of days later—“nothing else was thought of”—and much speculation ensued about how any fire could have started in an iron building widely believed to be fireproof. Many people thought that the fire’s surprising speed and intensity pointed to arson, although there was no agreement as to the identity of the culprit or culprits. One eyewitness

remembered seeing “two or three boys” running pell-mell down 42nd Street after the first alarm had been raised. Another saw a man in a dark coat exiting the storeroom about the same time with his hat pulled suspiciously down so as to conceal his face. Still others spoke of smelling gas, camphene, or turpentine in the same area, evidence “that there must have been villainous [sic] work in the matter.” As for a possible motive, the *Tribune* pointed out that property owners in the neighborhood had wanted the Crystal Palace removed because of the “grog-shops and other disreputable establishments” it attracted. “Suffice it to say,” the paper concluded darkly, “their end is attained.” Hefty rewards were offered for the arrest and conviction of the “remorseless wretch” responsible for the blaze.

Not everyone assumed an arsonist was to blame. Another eyewitness told the *Tribune* that he heard someone say, “they are going to light the gas,” after which he heard the cry of “fire, fire.” Almost immediately thereafter,

I saw streams of fire like snakes running in all directions through the building and setting it on fire nearly as fast as a man could run. The color of the smoke, the intensity of flame, and two or three small explosions, forces the idea to my mind that, to save a few dollars, the gas pipes of the Crystal Palace had only been gutta percha [latex] instead of wrought iron tubes; and that shortly after the gas was turned on there was a

leak somewhere in [the] rear of the north nave which set fire to the gas tubes . . . [which] was the true and legitimate cause of this lamentable disaster.

The next day, when he returned to the ruins and searched for signs of iron tubing, this witness said he could find nary a one. Until he had reason to think otherwise, he preferred his theory that the fire began with a ruptured gutta-percha gas line. A representative of the firm that installed them swore under oath, however, that all 30,000 feet of the lines were made of wrought iron with lead fittings and regularly inspected. After sifting through this and other contradictory testimony, the *Times* agreed that an incendiary must have been responsible for the fire as there was no credible evidence of “any oversight, carelessness or accident of those within the building.” Even so, subsequent investigation by the authorities failed to produce a suspect or suspects, much less a motive, and to this day the cause of the conflagration remains unclear.



What is clear is that the fire made a profound impression on everyone who saw it. A visitor from out West declared that he had watched “steamboats in flames” as well as “prairies on fire,” but nothing remotely like the burning of the Crystal

Palace in New York. “Grand and sublime,” exclaimed a city resident—*sublime* being a word favored in those days for great scenes that could not be called *beautiful* but nonetheless inspired awe, incredulity, and even trepidation. Others spoke of the scene’s “awful grandeur”—of “a splendid and exciting spectacle”—“magnificent and sublime beyond anything that I ever witnessed”—“grand and sublime, presenting the most magnificent spectacle ever witnessed in this city”—“truly grand and at the same time terrific,” declared a Brooklyn man, himself probably one of the exhibitors wiped out by the fire, who watched the whole thing on the ferry home.<sup>4</sup>

“All who witnessed the spectacle,” wrote a reporter for the *Herald*, “declare that it was one of those things rarely seen in a lifetime.” The *Times* called it “one of the most disastrous conflagrations that New-York has been visited with in a long time,” adding, “The calamity has struck everyone aghast, for the possibility of such an event has never been calculated upon. The peculiar character of the building, constructed as it was almost entirely of iron and glass, appeared to bid defiance to the flames, yet its destruction was more rapid than any building of wood could possibly have been.” Even the *sound* of the inferno—“the cracking of glass, and roaring of wind & flames, as they rushed up through the roof and sides of the building”—was strange and unforgettable.

“The Crystal Palace is no more!” exclaimed the *American Phrenological Journal*. In minutes, that “immense and beautiful structure” had been utterly destroyed. Some doubted the city could ever recover. “We shall never have another Crystal Palace,” fretted the *Tribune*. “Its glorious dome . . . is no more; its galleries, its treasures, its magnificent expanses indispensable to the mass-gatherings of this great metropolis—its superb memories are all gone, and gone forever.” And not only New York will grieve: the destruction of the Crystal Palace would come as a “painful surprise” to people around the country—a “cause not only for local but national regret.”

Within days of the fire, crews began cleaning up, carting off tons of rubbish. They finished quickly. Rainy weather discouraged looters, the crowds of onlookers dwindled, and soon the country was preoccupied with civil war. In time, it had bigger expositions elsewhere to gawk at as well. Even before Reservoir Square became Bryant Park, a leafy oasis in the concrete desert of midtown Manhattan, what had once been the most famous destination in the United States was all but forgotten. Historians haven’t been much help, either, in preserving public memory of the Crystal Palace. It has been the subject of no more than a handful of scholarly articles and earns at best passing mention in a few standard narratives of the period.



This little book is my attempt to recapture the lost story of the New York Crystal Palace and to understand why this building mattered so much to antebellum Americans in general and New Yorkers in particular, yet would never be rebuilt. The explanation is partly one of colliding ambitions, miscalculations, incompetence, and mismanagement that no one wanted to go through a second time—in its account of the fire, *Scientific American* alluded cryptically to “a series of troubles and vicissitudes of no ordinary character.” Others might prefer to call it the quintessential New York tale. It is also part of the larger narrative of how, seventy-five years after Independence, Americans cast off Revolutionary republicanism, which idealized a life of frugality and self-sufficient simplicity, and embraced the brave new world of industry, luxury, and the siren song of the marketplace.

While identifying and combining the various elements of this story, I had the undeserved good fortune to receive assistance, advice, and encouragement from patient friends, notably Peggy Brown, Ralph Brown, Don Gerardi, Paul Goodspeed, Michael Hattem, Matt Knutson, Bob Mutch, David Troyansky, Lindsay Turley, and Sharon Zukin. I trust they won't be too disappointed in the results. Special thanks as well to my agent, Sam Stoloff; to Tim Bent and Amy Whitmer at Oxford University Press; and to my collaborator of many years, Mike Wallace.

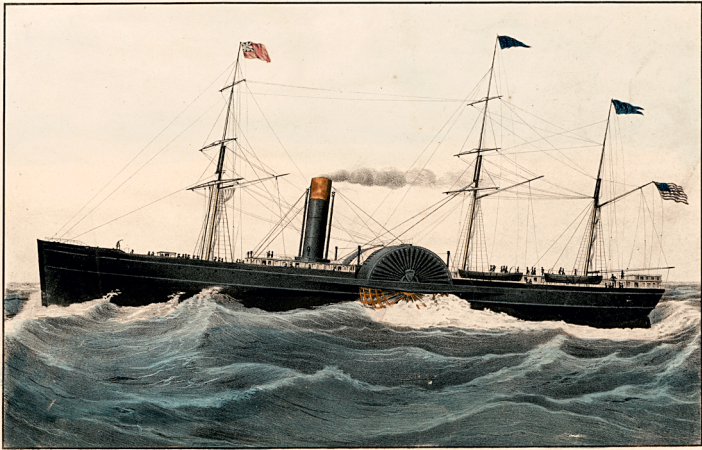
I have dedicated this book to my wife and children, architects of my own Crystal Palace.



ONE

## Glances at Europe

AT THE END OF April 1851, the speedy new side-wheeler *Baltic*, twelve days out of New York, churned into Liverpool after a rough Atlantic crossing (Figure 1.1). Among her 204 bilious passengers was Horace Greeley, moon-faced editor of the *New-York Daily Tribune* and celebrated friend of labor, promoter of industrialism and invention, champion of reform (temperance, women's rights, abolition), and advocate of cooperative socialism (Figure 1.2). Though grateful to have survived “the perils and miseries of the raging main,” as he put it, the American newspaperman promptly caught a train to London—not necessarily a safer mode of transportation, given that exploding boilers and catastrophic derailments were still common in those early days of rail travel. But Greeley was in



[FIGURE 1.1] The USS *Baltic*, one of four transatlantic steamships belonging to the new Collins line. Months after Greeley's trip to the Great Exhibition, she made the Atlantic crossing in under ten days—a record that stood for years. Edward Collins, founder of the line, later served on the board of the Crystal Palace Association in New York. (Courtesy of the Library of Congress)

a hurry. He needed to be in London on the first of May, only a day or two away, when Queen Victoria and Prince Albert would open the Great Exhibition of the Works of Industry of All Nations, the first world's fair, in Hyde Park.<sup>1</sup>

Exhibitions as such were nothing new. In England, they had been used to promote domestic manufacturing since the middle of the previous century, and there was a group in Paris called the Temple of Industry that put one on every few years

or so. But this was to be an event of unprecedented scope and magnitude. Henry Cole, one of its organizers, promised to put on “a festival such as the world has never seen.”<sup>2</sup>

Not surprisingly, given the breadth of this vision, the Great Exhibition would mean different things to different people. Some thought its emphasis on innovation and good design would raise standards of production while improving public “taste,” which in practice often meant stoking consumer demand for manufactured goods. Others thought the sheer quantity of objects (ultimately more than half of which came from Britain itself) would provide tangible evidence that British manufacturing already outstripped that of other nations and defined what it meant to be “modern.” Still others expected the Exhibition to underscore the power and reach of the new British Empire by summoning goods from distant provinces, along with luxuries from workshops throughout the so-called civilized world, then assembling them under one roof. Prince Albert himself hoped the Exhibition would advance the cause of international peace by promoting free trade and friendly competition among nations instead of protectionism and its inevitable outcome, war. It’s not always clear what ordinary visitors thought, although almost everyone seems to have had a good time.<sup>3</sup>

Arguably the most prominent American to attend the Great Exhibition, Greeley was also one of the most vocal proponents



of the idea, now almost axiomatic among many of his compatriots, that it was an opportunity to show not simply the abundant natural resources or agricultural prowess of the country, but how industrialization would improve the lives of working people. By the time he boarded the *Baltic*, upbeat progress reports in the *Tribune* as well as other papers had already helped to make the fair an urgent topic in the United States—“watched and discussed,” Greeley would assert, “not more earnestly throughout the saloons of Europe, than by the smith’s forge and the mechanic’s bench in America.”<sup>4</sup>



Adding to the hoopla were eye-popping accounts of the building erected to house the Exhibition. Designed by Joseph Paxton, a farmer’s son, currently the Duke of Devonshire’s head gardener, and a man with a gift for innovative architecture,

LEFT [FIGURE 1.2] Horace Greeley, portrait by Matthew Brady, ca. 1844–1860. In early 1852, when Greeley was on the road lecturing on “The Crystal Palace and Its Lessons”—later collected into a book of the same title—a friendly editor described the “threadbare white coat,” broken-down hat, scuffed boots, “intellectual head,” and “milk-white face” for which Greeley had become famous. When they met a couple of years later, Lord Acton thought Greeley “a very strange-looking man, half cracked and half a rogue.” (*The Barre Patriot*, Jan. 23, 1852; “Lord Acton’s American Diaries,” *Fortnightly Review*, 110 (1921), 739.) (Image courtesy of the Library of Congress)



[FIGURE 1.3] The Crystal Palace, Hyde Park, London. Depictions of its New York counterpart would often place it in a similarly bucolic setting, surrounded by grass and trees. (*Dickinson's Comprehensive Pictures of the Great Exhibition of 1851*. Courtesy of the Smithsonian Libraries.)

it resembled nothing so much as an enormous greenhouse or railway shed, better than 600 yards long and 150 wide, made up of a million plate glass panels set in prefabricated iron frames and bolted together. When completed in a mere seven months, it covered almost nineteen acres and would contain 13,000 exhibits from forty nations around the world (Figure 1.3). It was also high enough (at 108 feet) to enclose spectacular fountains and several full-grown elms. People dubbed it the Crystal Palace, and by all accounts it was as worth seeing as anything in the Exhibition. Greeley himself trumpeted the Crystal Palace as the perfect symbol of modern,

industrial society—a new kind of building for a new kind of world. It was, he would write, “one of the noblest, most magnificent, most graceful edifices ever seen” and the beginning of a revolution in architecture. “Depend on it,” he prophesied, “stone and timber will have to stand back for iron and glass hereafter, to an extent not yet conceivable.” Almost everybody who saw it had the same reaction (Figure 1.4).<sup>5</sup>

The Crystal Palace had to be “the most marvellous edifice in the world,” gushed the *Brooklyn Eagle*. Under its former editor, Walt Whitman, the paper had wanted exhibitions to instruct and improve the masses. Now it could scarcely contain its enthusiasm for Paxton’s building in London, declaring that “There has been nothing to compare with it for grace, lightness, fancy, and variety of effects as the sun is crossed by moving clouds.” Similarly, an enraptured visitor from Philadelphia wrote of the building’s “great arch, which sprang like a silver bow aloft, while the symmetrical naves swept

FOLLOWING PAGE [FIGURE 1.4] Interior view of the north transept, Crystal Palace. The first of a series of color lithographs prepared for Prince Albert, this view of the north transept shows the huge glass fountain, silhouetted against one of the two elms, at the center of the exhibition. Note the sculpture at the base of each column and the galleries above. “The view from near the end close to the last entrance,” Queen Victoria wrote in her diary, “one can never, never carry in one’s mind—each time one is amazed afresh at the immense length and height and the fairy-like effect of the different objects that fill it” (quoted in Gibbs-Smith, *Great Exhibition*, 20). (*Dickinson’s Comprehensive Pictures of the Great Exhibition of 1851*. Courtesy of the Smithsonian Libraries.)





softly away in the distance, and left its impress indelibly upon the soul.” Quoting first Milton and then the Bible, Yale’s Benjamin Silliman observed how “‘It rose like an exhalation,’ a magical illusion of the senses. The framework of iron, although strong enough to sustain weight and to resist the winds, is so little apparent to the eye, that the Crystal Palace appears a sea of glass, as in Revelations, ‘A sea of glass like unto crystal.’” The Reverend Cleveland Coxe of Baltimore, who initially dismissed the Crystal Palace as “a mere toy of Prince Albert’s,” changed his tune when he saw it for himself:

The crystal roof showered a soft daylight over the immense interior; the trees and curious plants gave it a cheerful and varied beauty; the eye bewildered itself in a maze of striking objects of luxury and taste; musical instruments, constantly playing, bewitched the ear, their tones blending from various distances and directions, in a kind of harmonious discord; fountains were gurgling and scattering their spray, like diamonds and pearls, and the rank and pride of England mixed with the auxiliary representatives of foreign states. . . .

As the excitement mounted on both sides of the Atlantic, hotels, railroads, and steamship companies reportedly planned special excursion packages for curious tourists. London shopkeepers tried to lure visitors from the States by advertising