

The second part of the book focuses on the construction of the city's two most important structures: the President's House and the Capitol building (built to house Congress and the Supreme Court). Considering the difficulties that plagued this process—from financial and political problems to personal conflicts—this section constitutes the most thoroughly researched and most interesting part of Kapsch's book. Here he documents in detail such problems as damage and deterioration of buildings resulting from the use of inappropriately prepared materials. Once the English-born architect Benjamin Henry Latrobe took over, the whole process stood on a more professional footing, and such issues abated. Still, the problems Latrobe inherited required great skill to resolve, and, as a result, he encountered much resistance and animosity. He eventually resigned his position during the project's third phase—the reconstruction required following the damage inflicted by British troops in 1814. After Latrobe, the Boston-based Charles Bulfinch took over the design for the Capitol.

This part of the book is exhaustively researched and tells an intriguing story. Kapsch documents every step of the building process, names virtually everyone involved, and explains every major decision. He provides an illuminating section on materials, including discussion of their availability and transport (51–59), and he demonstrates the complexity of the issues that the later, and often vilified, commissioners faced; this helps to alleviate some of their poor reputation as incompetent amateurs. Kapsch also illuminates the inherently systematic nature of the construction process, explaining that the commissioners initially neglected to establish primary transportation systems, such as canals and bridges, thereby seriously hampering the work and increasing the costs of bringing materials to the city. The result of Kapsch's efforts is a blow-by-blow account of a complex and messy process, including errors in judgment and the incompetence of the original governing body. Surprisingly, that body successfully set in motion the building of the new capital city, despite its rural location and its failure to develop as expected commercially.

The book's last chapter returns to infrastructure, primarily roads and canals. Also

discussed here are well-documented problems that arose in the building of the foundations and piers of the Potomac Aqueduct; these problems demonstrated the lack of professional knowledge endemic among the city's early builders.

Kapsch's study shows its weaknesses as soon as contextual issues enter the mix. If context is relevant to an argument, it must be just as well researched as everything else. When contextual details are imprecise, it will invariably occur to the reader that perhaps other, less easily verified information might also be inaccurate. For example, the encyclopedia that Jefferson referenced (56–57) appears to have been Denis Diderot and Jean le Rond d'Alembert's *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers* (1751–72, with later supplements), not the *Encyclopédie méthodique*, as mentioned here. The volumes of the *Encyclopédie méthodique*, published by Charles Joseph Panckoucke, did not begin appearing until 1782, and they apparently did not include information on civil engineering, architecture, or construction. Such matters do not detract from the value of the originating concept of *Building Washington*, nor do they lessen the book's readability. But they should be corrected or explained with the same close attention that the author laudably displays elsewhere in the book.

Of this study's occasional errors and imprecise language, I will offer a few further examples. First, the distinction Kapsch makes between an engineer and a contractor derives from Latrobe's opinion (99–100), and it is neither useful nor historically apt. The issue is more complex than either Kapsch or Latrobe makes it seem. Latrobe was, arguably, the first professional architect in the United States. In England, he apprenticed under the autodidact John Smeaton, the first man to call himself a “civil engineer” (as opposed to a military engineer), and the neoclassical architect Samuel Pepys Cockerell. L'Enfant, meanwhile, was educated as a painter and landscape designer. He served under Lafayette in the military engineers, but it is unknown what engineering he may have learned there. He might therefore be considered a gifted landscape designer who ventured successfully into city planning. Neither Latrobe nor L'Enfant was an engineer in

the modern sense, as were the graduates of Jean-Rodolphe Perronet's *École Nationale des Ponts et Chaussées* (from 1747), with their rigorous science- and technology-based education. Some additional errors and oversights: James Finley was a farmer, politician, judge, and autodidact inventor, not an engineer (93); the Halle aux Blés (not “Halle au Blé”) in Paris was round, not octagonal (181); Franz Anton von Gerstner was not German but Bohemian, and therefore a subject of the Austrian Empire (241); the “Lieutenant Bartlett” mentioned was William Holms (or Holmes) Chambers Bartlett (1804–93), one of Sylvanus Thayer's first three students at West Point, and thus one of the best-trained academic engineers in America at the time (249).

These are admittedly minor details, but they do raise flags. The book's value to historians lies in those many parts that have been more carefully researched and are more clearly articulated. Its weakness lies mainly in the fact that the history of construction is a fledgling discipline still in the process of professionalization.

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James D. Dilts

**The World the Trains Made: A Century of Great Railroad Architecture in the United States and Canada**

Lebanon, N.H.: University Press of New England, 2018, 304 pp., 230 color and 2 b/w illus. \$50 (cloth), ISBN 9781611688023

In *The World the Trains Made*, James D. Dilts offers a visually rich and evocative study of the railroad architecture that has survived the decline, collapse, abandonment, and bankruptcy of the railroads. In the nineteenth century, railroads were the largest and most prosperous businesses in North America, the very symbols of the Industrial Revolution. All along the right-of-way—what historian John Stilgoe calls the “metropolitan corridor” of tracks, stations, and associated buildings, from New York's magnificent Grand Central Terminal to the thousands of one-room stations in rural settings—“the railroad represented modernity.”<sup>1</sup> “Civilization literally followed the wave

of railroad construction across North America,” Dilts writes in his preface (ix). Even if served by only one local train per day, the typical railroad station included a telegraph office and often a post office. These helped tie rural communities, small cities, and major metropolitan regions into a complex web, with the railroad providing the connecting trafficways.

Dilts identifies “adaptive reuse” as a key subtext of his book. Just a fraction of the stations and associated structures he covers are still functioning as railroad facilities. Today, Grand Central Terminal serves only the New York area’s Metro-North commuter trains. No longer does the sleek Twentieth Century Limited depart the station each evening on its dash to Chicago. Amtrak’s long-distance trains all arrive at and depart from Penn Station, located in the hideous basement of Madison Square Garden. Grand Central came within a hair’s breadth of following McKim, Mead & White’s Penn Station under the wrecker’s ball. It survived only because of the outrage stirred by Penn Station’s demolition—an incitement for the modern historic preservation movement—with its interior renovated into spaces suited for upscale shopping and expensive restaurants. In downtown Detroit, the abandoned Michigan Central Station—designed by Whitney Warren, Grand Central’s architect—long stood as a stark symbol of that city’s decline. Filled with debris and covered by graffiti, it shared the fate of thousands of other railroad buildings nationwide. Dilts might have included this station and others like it to illustrate the problems of adaptive reuse as a preservation strategy. Fortunately, in January 2020 the Ford Motor Company announced its plans to convert the Detroit station, which it purchased in 2018, into the centerpiece of a high-tech innovation campus. Had Dilts highlighted such abandoned-but-surviving railroad architecture, he could have further dramatized what indeed has been saved, as illustrated by his book’s beautiful photographs.

One strength of this book is that the author clearly understands how the architectural environs created by the railroads extended well beyond the passenger platforms. A grand station provided an elaborate gateway to a metropolis. Terminal Tower in Cleveland, Station Square in

Pittsburgh, Union Station in Kansas City, Main Street Station in Richmond, and King Street Station in Seattle, among many others, were all designed to impress arriving visitors. Adjacent park spaces and public squares provided elaborate settings. Whitney Warren compared such gateway stations to the triumphal gates of ancient cities: “The city of today has no wall surrounding . . . as a pretext to such glorification, . . . nonetheless the gateway must exist . . . which discharges the human flow in the very center of the city.”<sup>2</sup> Warren’s sentiments gave voice to the aims of City Beautiful planning. Grand Central provided a gateway to the new “Terminal City,” the vast real estate construction project the New York Central Railroad built around its new terminal, stretching from Lexington to Madison Avenue and from Forty-Second to Fiftieth Street. Terminal City transformed Midtown Manhattan.

Railroad companies spent fortunes building their grand passenger stations, despite the fact that hauling freight remained their major source of revenue. Freight required much more by way of mundane depots, warehouses, and grain elevators. Such utilitarian architecture had to be positioned as near to the tracks as possible. Manufacturing companies were often located nearby, creating an industrial, commercial landscape along the railroad right-of-way through small towns and cities. When riding an Amtrak train from New York to Washington, D.C., a passenger can still see outside the window miles of a blasted railroad landscape crowding the tracks, filled with ruined freight depots and factories—an industrial world long ago abandoned by a post-industrial economy. Dilts includes several photographs of these former warehouses and depots, many of which, over time, have been converted to other uses. Silo Point in Baltimore, for example, once filled with large grain elevators, is now an upscale housing complex.

Other important components of the railroad landscape were the many large office buildings that accommodated armies of managers, engineers, and clerks. To function, the railroads needed a well-organized corporate bureaucracy, especially for the major trunk lines, which managed enterprises stretching from the

Atlantic coastline to the Midwest. For this reason, historian Alan Trachtenberg has argued that the railroad corporations initiated the “incorporation of America.”<sup>3</sup> Dilts features seven examples of office buildings in St. Louis, Albany, and Montreal, as well as New York’s Helmsley Building, all constructed by the New York Central Railroad. He notes that the Helmsley was part of Terminal City but does not mention the other office buildings lining Park Avenue north of Grand Central. Park Avenue and Terminal City occupied the air rights over Grand Central’s two-story underground electrified platforms and tracks. Income from these air-rights office buildings generated the revenue that the railroad used to finance the massive project.

In a chapter titled “The Back Shop,” Dilts investigates railroad maintenance and repair complexes: a 50-acre facility in Ely, Nevada; a station and small repair complex in Furnace, Pennsylvania; and the Baltimore and Ohio Railroad’s roundhouse and repair facility, now the B&O Railroad Museum, in Baltimore. A photograph of the Atchison, Topeka and Santa Fe Railway’s shops in Albuquerque provides one of the book’s rare illustrations of the railroad’s abandonment and decline.

The “Grand Hotels” chapter features city-center hotels built by the Canadian Pacific Railroad. The railroads constructed such hotels as tourist destinations to increase passenger revenue. Often situated miles from the railroads’ main lines, they necessitated the further construction of branch lines, such as those that carried tourists to the Grand Canyon, Bryce Canyon, and Banff Springs in the Canadian Rockies.

A story not told in *The World the Trains Made* is that of the hundreds of workaday hotels located near the stations in almost every city and small town from coast to coast. Rather than offering tourist destinations, these hotels provided basic service to millions of travelers and workers, and in doing so they became an important part of the railroad landscape. In the chapter “How They Lived,” Dilts includes discussion of three railroad YMCAs that were purpose-built to provide low-cost lodgings for both passengers and railroad employees.

While the book presents some beautiful photographs of the luxurious dwellings of

railroad barons, these buildings are not railroad architecture per se. The Harry Packer Mansion in Jim Thorpe, Pennsylvania, and Henry Flagler's Palm Beach, Florida, estate would fit in perfectly with the Gilded Age "summer cottages" along Bellevue Avenue in Newport, Rhode Island. These houses belong in another book, as do parts of Dilts's last two chapters, which focus on railroad bridges and tunnels, locomotives, and passenger cars.

In the chapter devoted to bridges and tunnels, the section on the Eads Bridge (1868–74) describes one of the era's most important engineering and construction innovations: the use of pressurized caissons to anchor the piers on bedrock 136 feet below the high-water mark. Named for its designer, James Buchanan Eads, the bridge spans the Mississippi River at St. Louis. It was a tremendous technological accomplishment, despite fourteen worker deaths from the bends, or decompression sickness. Soon after Eads began work, John Augustus Roebling followed his lead in using pressurized caissons to construct the two towers for the Brooklyn Bridge (1869–83) over New York's East River. This excellent chapter provides a succinct summary of how the railroads drove innovations in technology.

Dilts's book will be of interest to historians as well as preservationists. It thoroughly illustrates the creative reuse of nineteenth-century railroad architecture across the United States and Canada. In some cases, these buildings still serve as railroad facilities, but most are now being put to other uses. With the revitalization of many downtowns, the remaining abandoned and neglected central railroad buildings may survive if repurposed; they might even reemerge as gentrified destinations serving Amtrak passengers and revitalized local commuter lines.

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## Notes

1. John R. Stilgoe, *Metropolitan Corridor: Railroads and the American Scene* (New Haven, Conn.: Yale University Press, 1983), 3.
2. Whitney Warren, "Monumental Gateway to a Great City," *Scientific American* 107, no. 23 (7 Dec. 1912), 484.
3. Alan Trachtenberg, *The Incorporation of America: Culture and Society in the Gilded Age* (New York: Hill and Wang, 1982), 3.

Kathryn Smith

### **Wright on Exhibit: Frank Lloyd Wright's Architectural Exhibitions**

Princeton, N.J.: Princeton University Press, 2017, 291 pp., 57 color and 188 b/w illus. \$60 (cloth), ISBN 9780691167220

Barry Bergdoll and Jennifer Gray, eds.

### **Frank Lloyd Wright: Unpacking the Archive**

New York: Museum of Modern Art, 2017, 256 pp., 222 color and 52 b/w illus. \$65 (cloth), ISBN 9781633450264

These two books make important contributions to our understanding of Frank Lloyd Wright's long career and the formation of his critical and historical reputation, now extending into our own time well over a half century after his death. Both cast significant new light on overlooked or minimally examined aspects of Wright's life's work.

Making expert use of the rich archival holdings of the Frank Lloyd Wright Foundation and many other sources, Kathryn Smith has produced a compelling account of Wright's negotiations and preparations for a career-long series of exhibitions of his work, mainly in the United States, but also in Europe. Although Wright's exhibitions are mentioned in earlier biographies and scholarship, they had yet to receive focused and consistent scholarly attention. Thus, *Wright on Exhibit* admirably fills a lacuna in Wright studies, and its chapters are fascinating in their accounts of the difficulties and successes surrounding the staging of these important events during his lifetime. The range of media involved (different kinds of drawings, models, and photographs), the design of the exhibition spaces, the preparation of the catalogues and related documentation, the shows' funding, their publicity and reception, the collaborative role of apprentices and curatorial contemporaries, from Wright's first participation in a group exhibit in Chicago in 1894, one year after he started his independent practice, to his last solo show in New York in 1959—all of these come dramatically into view in this book's seven chapters. Before this book, Wright's history as an exhibiting architect seemed a natural by-product of his productivity and innovations. But what Smith's narrative shows is that this aspect of his career was, like his

building projects, anything but inevitable. What is striking is how, repeatedly, Wright had to fight for the conditions under which his work was exhibited.

Smith concentrates on Wright's most important exhibitions throughout his career, as distinct from a large number of smaller events of less scope and impact. Chapter 1 traces Wright's program of exhibition with the Chicago Architectural Club, where he participated in eight exhibitions from 1894 to 1914, including his three most important early individual shows, in 1900, 1902, and 1907. Smith describes how he then established an approach to the exhibition of his works that he would follow throughout his later life. Wright chose to exhibit the largest possible quantity of items in a distinct space of his own, then pursued publication of his designs in a lavishly illustrated format he designed himself. He would accompany this with a separate publication of his philosophy; additionally, a colleague sympathetic to his work would evaluate it in a different illustrated publication. This chapter clarifies how Wright's meticulous attention to the design of the exhibitions, along with his commissioning of installation photographs, directly informed his crafting of related publications, including his two major book projects with Ernst Wasmuth Verlag in 1910–11.

Chapter 2 narrates the story of Wright's engagement with the generation of American architectural criticism informed by the advent of the European modern movement after World War I. Wright's efforts to reestablish his importance in this climate culminated in major exhibitions of his work from 1893 to 1930 held at Princeton University and the Architectural League of New York, both in 1930, and his participation in the International Style show at the Museum of Modern Art in New York early in 1932. The show at the Architectural League was his first in New York as well as his first traveling exhibition; it moved to the Art Institute of Chicago later in 1930. This was a pivotal event in the rehabilitation of his reputation in the architectural world and beyond. As he had done before and would after, Wright exhibited a number of works simultaneously in the show, rather than focusing on a single project, in order to demonstrate how his work as a whole explored