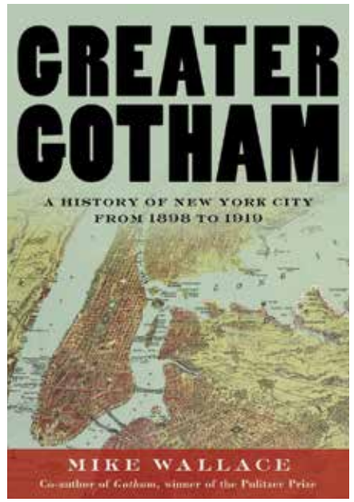
REVIEWS

Greater Gotham: A History of New York City from 1898 to 1919, by Mike Wallace. Oxford University Press, 2017. 1,182 pp., $45.



Much of the city New Yorkers are familiar with arrived very suddenly. The years from 1898 to 1919, following the end of World War I, was the period when New York catapulted from being the United States's national city to becoming the world's preeminent global city and the capital of modernity and the 20th century. *Greater Gotham* is the story of how this happened.

Greater Gotham is the sequel to historian Mike Wallace's *Gotham*, the Pulitzer Prize-winning tome published in 2000, which covered the 375 years from Verrazzano's sojourn in New York Harbor to the 1899 consolidation that officially joined the five boroughs and affirmed New York as our leading metropolis. This is where the current book picks up, with five interrelated themes propelling the narrative:

- The consolidation made New York the capital of business, finance, commerce, law, accounting, architecture, engineering, the arts, entertainment, popular culture, publishing, and political thought, as well as a primary voice in the nation's public agenda.
- New York's dramatic population growth (1.51 million in 1890 to 5.62 million in 1920), including the vast growth of its immigrant population (600,000 to 2.2 million), drove the city's vitality and physical expansion. Its growth also endowed us with a tension between the corporate and financial elites and everyone else, a drumbeat of urban life ever since.
- Through visionary leadership, public largesse, and the public philanthropy of the very elites who were frequently vilified, the city began to take the shape and form we are familiar with today.
- The infrastructure systems that bound the city together, sustained it, and connected it to the rest of the country (transit, rail, bridges, roads, port facilities, water, sewerage, power) took modern form. This process continued through the 1920s and intermittently since then.
- New York's growth in power and preeminence was a response to the nation's foreign affairs, a phenomenon that has endured since the city's founding. During this period our imperial adventures and participation in WWI dramatically stimulated the city's growth.

The list of achievements during the 20-year period covered by *Greater Gotham* is staggering. Penn Station and Grand Central were built and became regional transit hubs. The first element of the vast 722-mile subway system, the IRT from City Hall to Grand Central to Times Square to 145th Street, went into operation. The new East River crossings—the Manhattan, Williamsburg, and Queensborough bridges—opened Queens, Brooklyn, and Nassau and Suffolk counties to major population expansions.

New York's zoning ordinance, imposing structured land-use controls, was enacted in 1916. The Woolworth Building, the Met Life Tower, the New York Times Building, and countless other commercial office buildings were built as Midtown and Downtown took on their modern vertical forms. Times Square and the Theater District solidified, with many theater additions, like the Lyceum, Shubert, Booth, and the New Amsterdam. Major Midtown department stores —Macy's, Lord & Taylor, Henri Bendel—emerged. Major new university campuses, such as City College and Columbia, sprung up on cheap land uptown. The Metropolitan Museum of Art, the Brooklyn Museum, and the Brooklyn Academy of Music created new institutional homes or expanded them. The beat goes on and on.

Wallace's story of New York's spring forward is wide-ranging and highly detailed. (The book is also long and heavy, weighing 5-plus pounds.) He has written a political, economic, social, and cultural history of the era when the modern city was formed. Settle in for a deeply engaging visit to our not-so-distant past.

Built: The Hidden Stories Behind Our Structures, by Roma Agrawal. Bloomsbury, 2018. 300 pp., $25.

Built is part primer on structural design and material science, part adventure story/case study exploring innovative structures, and part empowerment tale for young women in engineering. Agrawal's roadmap starts with a discussion of forces (compression, tension, bending, wind) and how they operate on structures; continues to materials; and leads to foundations, elevators (every 72 hours the equivalent of the world's population travels in an elevator—who knew!), and the array of what the author regards as the hidden systems of structures.

The core of the book is made up of the extensive case studies where innovative approaches were employed to solve functional and structural problems. Many of the cases are interesting and informative (e.g., the Pantheon and Brunelleschi's Duomo found solutions to the challenges of the dome), but three are particularly engaging and revealing. One involved the work to arrest the differential settlement of the Central Cathedral of Mexico City, a city built on a filled-in lake. The project is a both a lab, where soil mechanics and structural integrity are continuously monitored, and an active house of worship. Another case study, the Thames Tideway Tunnel—which supplemented, extended, and updated Joseph Bazalgatte's Victorian-era London sewer system—illuminates a complex, intertwined set of projects in a dense urban area, and showcases how infrastructure is directly related to public health. The third study focuses on bridge design, beginning with Emily Warren Roebling and her pivotal role in realizing the Brooklyn Bridge, and leading to stories of five other innovative bridges, including the Old London Bridge.

Editing could have been tighter, particularly related to tone. An occasional acknowledgment that architects are active collaborators with engineers might have added a note of realism to the presentation. Nevertheless, Agrawal's book is an interesting and frequently enlightening exploration of structural engineering we could all benefit from.

Stanley Stark, FAIA, is the book critic for Oculus.