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Architecture, Taken Apart With Pen and Ink

By JEREMY KAHN

WASHINGTON, June 20 — David Macaulay could be called the Mr. Wizard of architectural history. In 23 books over three decades, his arresting pen-and-ink illustrations have explored everything from the construction of ancient pyramids to the subterranean systems that support a modern metropolis.

Often marketed to children, these books are equally popular with adults, who appreciate their ability to use a primarily visual language to make history, architecture and engineering clear to laymen.

A survey of the drawing process of the 60-year-old Mr. Macaulay's work opens on Saturday at the National Building Museum here: "David Macaulay: The Art of Drawing Architecture," a tour of his work and his methods. Mr. Macaulay assisted with the exhibition and will be present for "The Big Draw," an opening-day event in which visitors may try their own hands at drawing exercises. The show, in fact, encourages this sort of family-friendly viewer participation with sketching stations throughout the gallery.

Mr. Macaulay was trained as an architect at the Rhode Island School of Design, but never practiced. Instead, after brief stints as an interior designer and high school art teacher, he returned to the college as an illustration instructor, a position he still holds.

His first children's book, "Cathedral," detailing the methods used to build Gothic churches, was published in 1973 and established a formula he has returned to many times — in "Pyramid" and "Castle," for example. He examined the construction of a Roman town in "City" and the maze of pipes and tunnels under modern cities in "Underground." He is perhaps best known for "The Way Things Work," which reveals the mechanical and electronic innards of everything from radio telescopes to automatic transmissions.

Much as Mr. Macaulay's books deconstruct the built world, the retrospective seeks to "explode and explain" his creative process, said Kathleen Franz, an assistant professor of history at American University, who served as the exhibition's curator. This is most apparent in the first section, "Visual Archaeology," which tries to reverse-engineer "Mosque," his latest book, published in 2003.

"Mosque," which Mr. Macaulay has called his response to the events of 9/11, explores the construction of 16th-century Ottoman mosques. Visitors to the museum watch an edited version of the home video that Mr. Macaulay shot during a research trip to Istanbul, and may page through a reproduction of the sketchbook he kept on the trip. Some of the hundreds of preliminary drawings he made as he chose images for the book are also displayed. (Tellingly, Mr. Macaulay refers to his own creative process as "linear chaos.")

In a world of computer-aided design, he continues to do all his drawings by hand, in pen and ink. For this book he also built and photographed a paper architectural model to capture more effectively various angles of the mosque's interior.

Mr. Macaulay is known for selecting surprising points of view, and this aspect is highlighted in a section of the show called "Playing With Perspective." Here you find his pioneering "worm's eye" depictions of building foundations and city traffic from "Underground"; his fish-eye view of a medieval hall from "Castle"; and his pigeon's-eye panoramas of Rome from his fable of love, "Rome Antics."

To reinforce the theme, the curators have blown up some of Mr. Macaulay's sketches and affixed them to the floor, suspended them from the ceiling or transferred them to glass panes, forcing the viewer to engage in the action — looking down, up or through — suggested by the illustration's perspective.

Innovative methods of describing structure and scale are more of Mr. Macaulay's strong points. To illustrate the comparative sizes of the world's great domes, he depicted how five of these architectural wonders — the Hagia Sophia, St. Peter's Basilica, Les Invalides, the United States Capitol and the Pantheon — could fit inside a sixth, the Houston Astrodome.

In 2003, to celebrate the 100th anniversary of the Williamsburg Bridge, he wrote an “Op-Art” piece for The New York Times, “Want to a Build a Bridge?,” that included a scale silhouette of the bridge with instructions for cutting it out and constructing a newsprint model. (An example of the results is on display.)

Also on view are the sketchbooks that Mr. Macaulay used while planning “Building Big” (2000), his look at the engineering feats that make bridges, tunnels, skyscrapers and domes possible. Ms. Franz said her intent had been to demonstrate how Mr. Macaulay uses drawing to pose problems — both of engineering and of illustration — and solve them. (“Avoid predictable and dull chronological history of bridge building,” reads one sketchbook note to self.)

The exhibition’s final section, dedicated to Mr. Macaulay’s more fanciful, satiric and political work from the late 1970s and early 1980s, may be the least familiar to visitors. Yet, at least for adults, it may prove the most rewarding.

Mr. Macaulay often draws parallels between his own work and that of the 18th-century Italian draftsman Giovanni Battista Piranesi, popular for his engravings and etchings of romanticized landscapes. He shares Piranesi’s fascination with ruins; many of Mr. Macaulay’s images in this section of the show focus on remnants of modern structures in some imagined future.

Some images he created in 1976 for a series called “Great Moments in Architecture” are in the style of Piranesi, and his 1982 “Veduta della stazione grand central,” which depicts the post-apocalyptic ruins of Grand Central Terminal in Manhattan, makes clear reference to Piranesi’s art.

There is a playful aspect to some of this work. “Noseschwanstein” from 1976 is an image of a grand castle perched on a mountainous proboscis. His 1979 book “Motel of Mysteries” is a subtle satire of a field with which Mr. Macaulay has often been linked: archaeology. In it he humorously postulates the destruction of American civilization in a catastrophic avalanche of junk mail. Then, 2,000 years in the future, an archaeologist stumbles across the ruins of a motel and must decipher the function and meaning of the artifacts he finds inside. Unsurprisingly, the archaeologist gets most of it wrong.

There is also a haunting quality to some drawings. In “Unbuilding,” from 1980, Mr. Macaulay imagines the dismantling of the [Empire State Building](#) by a fictional Saudi prince who has purchased the structure to have it rebuilt in his kingdom’s oil fields. The book’s plot reflects the era’s anxieties about energy independence, economic decline and famous landmarks’ falling under foreign ownership.

But the images of a symbolic building slowly stripped down to I-beams will resonate with viewers today as it recalls photographs of the World Trade Center’s steel exoskeleton poking above the wreckage of ground zero.

“David Macaulay: The Art of Drawing Architecture” opens today and continues through Jan. 21 at the National Building Museum, 401 F Street NW, Washington; (202) 272-2448 or nbm.org.