BOOKS: BUILDINGS' UNTOLD STORIES RECORDED IN "STORIES IN STONE"

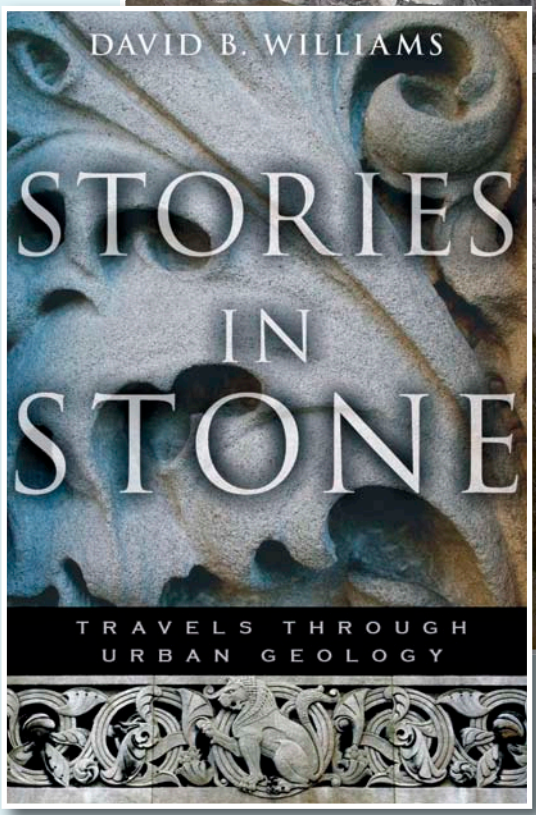
The buildings that surround us have deep and interesting histories. The design or architecture of a building may create the first impression, but in "Stories in Stone," author David B. Williams (a frequent contributor to EARTH) makes a compelling case to look closer at a building's very stones.

Building stone is typically exposed in walls, floors and decorations, and may be subtly beautiful. Whether we find travertine or granite gneiss, the rock from which we construct our edifices has much to teach us. Although Williams does an admirable job of explaining where to find the stones and how they formed, the book really shines when he talks about the human connections — how the stone is quarried by people and added to buildings under conditions that reflect unique historical circumstances.

The order of words in the title reflects this: The stories come first, the stone comes second. For Williams, geology is a prism through which to view human history. He does a particularly good job of this in his chapter devoted to Carrara marble, the white marble from Carrara, Italy, best known for its use in ancient Rome in sites like the Pantheon and made famous by Renaissance artist Michelangelo, who prized it above nearly all other stones. Williams ties together industrial folly in Chicago, Renaissance Italy, and the Italian taste for pig fat, all through the building stone.

In 10 chapters, the author discusses 10 different building stones, and travels to each stone's source locations, both prosaic and exotic. The Italian Alps give way to coastal Florida, the resort town of Carmel, Calif., and the suburban Seattle schoolhouse where Williams investigates the actual blackboard slate from which he was taught as a third-grader.

Another entertaining chapter ties together the rare use of petrified wood in architecture, Route 66 and the evolution of commuter culture, and the diluvial hypothesis (read: Noah's flood) for the origin of fossils. (Protestant reformer Martin Luther came up with that one.) Another chapter discusses the brownstone buildings that Brooklyn made so famous. It turns out that the brownstone



"Stories in Stone," by David B. Williams. Walker & Company, 2009. ISBN 9780802716224. Hardcover, $26.00.

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But the team has run into a major obstacle in answering these questions: Twitter only archives status updates for a week. "It is hard to do a detailed historical study about how people responded in an earthquake if the data only go back seven days," Earle says. Therefore, the team is creating an archiving system that downloads tweets about earthquakes, that will allow them to study Twitter users' responses to earthquakes over time.

So far, Earle says, tweets concerning earthquakes have primarily been qualitative: describing whether someone witnessed an earthquake or not and people's personal feelings about the event. But Earle and his colleagues are looking for ways to provide an assessment of the area affected by the quake quickly, potentially using Twitter as a vehicle.

"I hope that increasing use of Twitter by USGS will make the public more aware of our products," Earle says, such as the Prompt Assessment of Global Earthquakes Response (PAGER) program. PAGER, publicly released in 2007, monitors the USGS's near-real-time earthquake detection system, and, when an earthquake hits, automatically estimates how many people are exposed to ground shaking and the intensity of that shaking. The program also produces maps of the affected region that take several variables into account: The location of the earthquake, the depth of the earthquake, the different soils in the affected area and the soils' potential for shaking, to name a few.

"Collecting firsthand accounts from the public using the Internet is not new to USGS," Earle says, pointing to the existing application "Did you feel it?" — a Web site that provides a questionnaire that people who were affected by an earthquake can fill out. The program then synthesizes a person's response into a single earthquake "intensity" level, he says. With many people sharing their accounts of the earthquake on Twitter, however, USGS hopes the "Did you feel it?" application will see an even greater use.

Currently, "USGS information is being injected into Twitter [by the public], but not by USGS," Earle says. But in the future, USGS may start directly posting earthquake information into Twitter.

Zahra Hirji

One chapter discusses the famed Carrara marble, a white marble from Carrara, Italy (both above), from which Renaissance artist Michelangelo sculpted David (right), one of his most famous works that currently stands in the Galleria dell'Accademia in Florence.

comes from Connecticut, and accumulated in a Triassic-aged valley rifted open by Pangaea's breakup. These oxidized sandstones have yielded a wealth of dinosaur footprints. Walking down a street in Brooklyn, therefore, can lead to musings on the lives of extinct giant beasts.

Despite these more recent historical connections, as a geologist, I was most interested in the stories of the rocks themselves. Rocks form under conditions that are often interesting in their own right, and reflect geologic and tectonic processes that yield insights into Earth's history; and Williams does a commendable job of elucidating their deeper pasts. In describing Salem limestone, for example, one of the most common building stones in the United States, he examines the lives and deaths of foraminifera, the single-celled protists responsible for the vast accumulations of dead skeletons that make up the bulk of the rock. "When you see a Salem wall you are looking at a cemetery of epic proportions," he writes. It's this sort of shift in perspective that provides the true value of "Stories in Stone."

Williams writes for a broad audience, extending beyond geologists. An indication of this can be found in the chapter where he discusses Quincy Granite. In describing what sets granite apart from other rock types, he notes that "rarely will you find any layering, consistent orientation of the grains, or swirls. You will never find fossils." Such descriptions are less aimed at geologists than at the public and anyone with an interest in the world around them.

Similarly, Williams oscillates between the vernacular "granite," which includes black varieties, and more technical terms such as gabbro, which are explained well. His use of "black granite," however, got under my skin. Technically, such a thing is an oxymoron. Granites are light colored; gabbros are dark. Along similar lines, his analogy for a nonconformity didn't work for me: "the relationship between a NASCAR mom and an NPR dad." Though humorous, the analogy fails to capture the essential aspect of a nonconformity — the missing geologic time it represents.

Overall, "Stories in Stone" is an informative book. It is written in a factual, journalistic style. Each of the chapters stands alone as an essay similar to something you might read in this magazine, which does make for easy reading. The book's unique perspective gave me a new appreciation for many of the rocks that surround me every day.

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