

MOVIES

Elisabeth Moss, who plays Peggy Olson on “Mad Men,” branches out with “The One I Love.” **E11**

MUSIC

A generation of Vine stars hopes that six-second video clips are enough to launch a full career. **E7**

BOOK WORLD

In “Yeah! Yeah! Yeah!” Bob Stanley attempts to tell the story of pop in just under 600 pages. **E13**



ART

Photographer and printmaker Michael B. Platt takes an informal approach to teaching. **E16**

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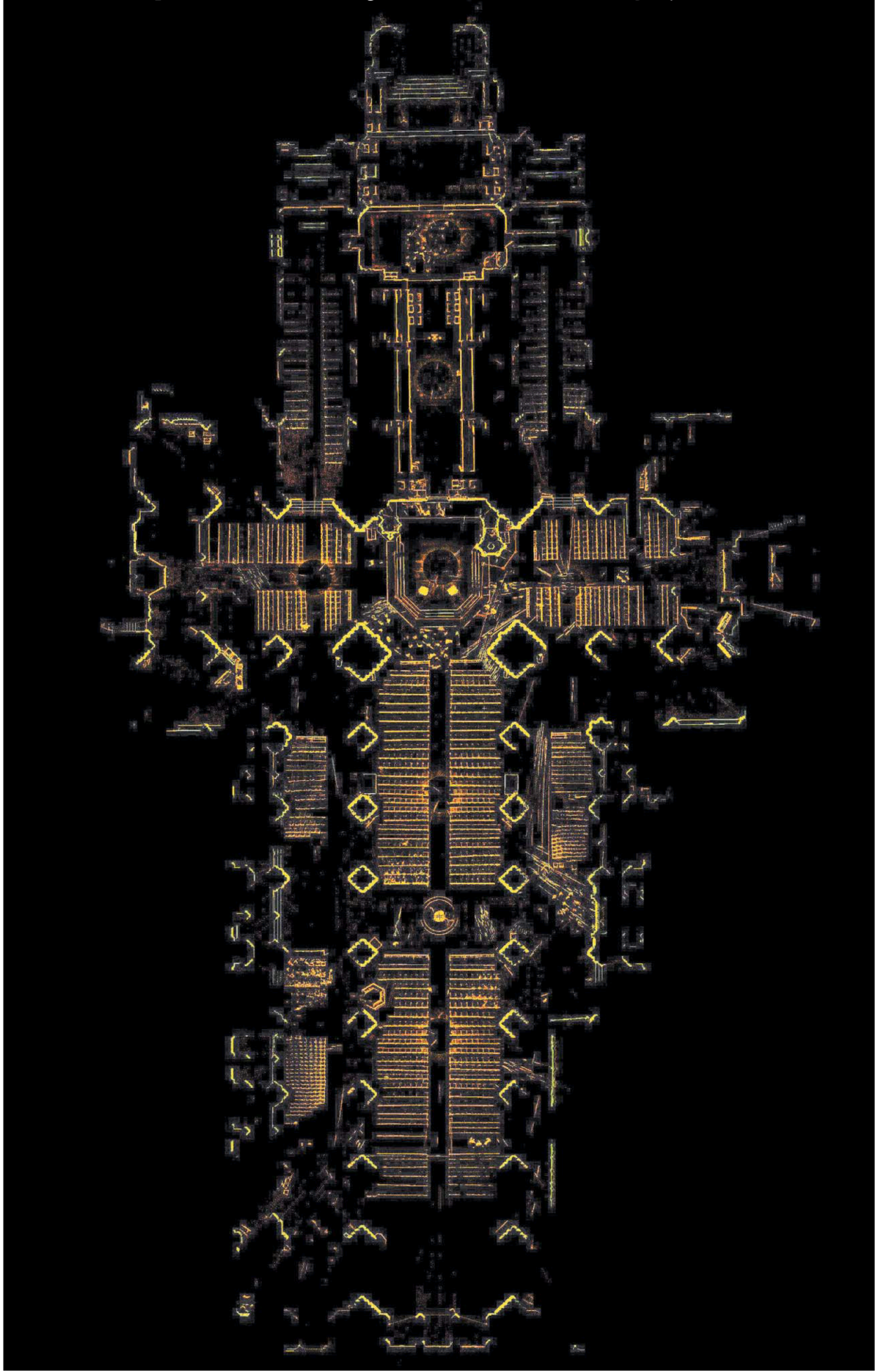
Theater **E10**

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A Gothic expert measures Washington National Cathedral’s majesty and refinement



ANDREW TALLON

## MAP QUEST

BY PHILIP KENNICOTT

Andrew Tallon stands at the clerestory level of the Washington National Cathedral, some 65 feet above the pews, and carefully positions the tripod of his Leica laser scanner on the narrow walkway. The camera straddles the metal guardrail, with one leg precariously close to the edge of the vertiginously high and exposed passage. As colored light streams through the enormous stained-glass windows on both sides of the nave, Tallon’s scanner shoots a green laser beam at about 40,000 flashes per second, registering millions of data points — accurate to within millimeters — in a little over five

minutes. When the data is processed, it will give the Vassar College professor a three-dimensional map of the cathedral, more thorough and accurate than traditional photography or old-fashioned (and time-consuming) physical measurement. Tallon, a specialist in Gothic architecture, has used the same technique to document some of the great cathedrals of France. His interest in the Washington National Cathedral, which was built

CATHEDRAL CONTINUED ON **E6**

**A complex that is all about clean lines**  
CityCenterDC, a new mixed-use development, has come to fruition in all its minimalist glory. **E3**



AMANDA VOISARD FOR THE WASHINGTON POST

**Chesapeake Shakespeare Company's new site is a 19th-century bank building that was used as a nightclub.**

## Theater troupe banks on Baltimore

Chesapeake Shakespeare’s new address is part of a thespian surge in Charm City

BY NELSON PRESSLEY

Baltimore’s historic 1885 Mercantile Trust and Deposit building has spent most of the 21st century remodeled as a mega-nightclub, ripe for hundreds of revelers grooving to deep beats. Yet when Ian Gallanar and Lesley Malin saw it, they dreamily pictured it as an update of Shakespeare’s Globe Theatre.

Now “Shakespeare” is the dominant word on the smartly refurbished stone building’s new marquee at Calvert and Redwood, barely two blocks north of Inner Harbor. That’s where the 12-year-old Chesapeake Shakespeare Company, known for outdoor summer performances in Ellicott City, is making its move into Baltimore.

The \$6.7 million project gets its ribbon-cutting next month, with Baltimore Mayor Stephanie Rawlings-Blake wielding the scissors. Performances of “A Midsummer Night’s Dream” begin days later, which is why CSC artistic director Gallanar and managing director Malin are closing the door behind them in one of the new dressing rooms on the basement level and turning off the lights. In the dark, resident costume designer Kristina Lambdin demonstrates a set of fairy wings with flickering light bulbs that she’s just made in the company’s modest new costume shop across the hall.

“I love it,” Gallanar enthuses to Lambdin, one of several longtime company associates that CSC has been able to bring on staff full-time with this company expansion.

CHESAPEAKE CONTINUED ON **E10**

EXHIBIT



**How cowboys (and killers) helped American ballet.** **E8-9**



# ARCHITECTURE



Andrew Tallon scans the Washington National Cathedral using a Leica laser scanner. An expert in Gothic architecture, Tallon discovered that many of Europe's historic cathedrals harbored small deviations from perfect vertical and horizontal lines.

## D.C. landmark goes under the microscope

CATHEDRAL FROM E1

centuries after the great age of Gothic architecture in Europe, has more to do with an odd quirk of history. He is, he says, looking for “the smoking gun” that will demonstrate the influence of William H. Goodyear on the cathedral's design.

Goodyear, who died in 1923, was the son of the man commonly credited with inventing “vulcanization,” a process which converts natural rubber into a stronger, more usable industrial material. The younger Goodyear turned his energies to art and architectural history, eventually rising to the position of curator of what is now known as the Brooklyn Museum.

Raised in Europe and educated at Yale, Goodyear became convinced that the great master builders of Europe's historic cathedrals intentionally built them with small imperfections. He based his thesis on close observation, and photographic evidence, from the cathedrals themselves, which are indeed full of many small deviations from perfect vertical and horizontal lines. They were, he argued, designed to be “out of plumb,” with walls that bowed and support pillars that leaned outward, because medieval architects believed these slight deviations made the spaces inherently more beautiful.

### Perfect imperfections

Nonsense, says Tallon. The architectural imperfections of medieval architecture have nothing to do with intentional corruptions to their design. The explanation for their quirks is much simpler: Stone has a natural tendency to move around, buildings settle and gravity has taken its toll.

Many of the great cathedrals were also built over the span of centuries, with new parts conjoined to old in a process of

accumulation and improvisation that inevitably led to small deviations from the “perfection” one would expect of a modern building.

And he can cite centuries of textual evidence that “keeping the walls in plumb was an imperative of theological order” for the medieval architects who struggled against gravity and the natural tendency of buildings to shift under stress. They may not have succeeded in keeping their buildings absolutely straight over time — Tallon's laser scanner has revealed astonishing deviations from strict vertical and horizontal alignment in some of the major cathedrals of France — but they strived to create in stone an image of heaven, which meant an image of architectural perfection. The mural and the moral were intimately connected, Tallon says.

Goodyear, though no slouch as a scholar, was either unaware of this literature — including passages from the Bible and church commentaries written in the 11th to 13th centuries — or perhaps dismissed its importance as evidence. What mattered to him were the facts on the ground, the walls with a slightly serpentine shape, piers that bowed outward, arches that weren't even on both sides. Meticulously, and with the use of an innovative camera, he documented these many deviations, convinced that they buttressed his core thesis. Many architectural historians scoffed, but Goodyear pressed on.

“He was resolutely shut down by naysayers,” Tallon says of Goodyear's English and French critics. But Goodyear seemed only more energized by the dissent. One lengthy 1907 response to a prominent British critic goes on for more than 50 densely packed pages of argument and aggrieved invective, a royal flogging well before the invention of the Internet. It includes testimo-

nials from French architects and experts who lent support to what Goodyear, with prickly self-deprecation, called “my heresies.”

These heresies were sometimes broadly referred to as “architectural refinements,” and Goodyear's supposed discovery of them in European cathedrals had some precedent in architectural history. The ancient Greeks made their columns bulge out slightly about a third of the way up to correct for the optical illusion of concavity — a technique known as entasis. If the Greeks understood the visual power of the non-rectilinear line, why shouldn't we assume the Gothic architects were equally subtle?

Goodyear's muddled thinking was also buoyed by broader historical currents. As the industrial era gathered steam, and the world became more mechanized, there was nostalgia (among some aesthetes) for the natural imperfections of man-made things, a celebration of objects that bespoke the presence of the human hand.

There was also a sentimental rediscovery of the Middle Ages (which often went hand-in-hand with a conversion to Catholicism) as a lost era of holistic unity in man's approach to the world, governed by a putative consensus about matters philosophical, religious and aesthetic. In this view — and Goodyear seems to have shared it — it was all downhill with the arrival of the Renaissance.

Finally, there was the reaction against modernity. At the time work began on the Washington National Cathedral, in 1907, the era of the high-rise office building was already advanced more than a quarter-century. The same construction firm that built the cathedral would go on to construct modernist landmarks such as Mies van der Rohe's Seagram Building and the U.N. headquar-

ters in New York City.

The revival of Gothic architecture long predated these developments but wasn't immune to them: Architects such as Philip Hubert Frohman, who played a major role in developing the Washington National Cathedral's design after World War I, wanted newly built Gothic buildings to be authentic and lively, true to the Gothic spirit, not just modern confections whipped up from borrowed elements.

Frohman, Tallon says, was worried that new Gothic buildings, such as the Cathedral of St. John the Divine in New York, were “too cold, too mechanical, too perfect.” Frohman wanted the style to be more than “a neo-Gothic pastiche of patterns, but something that can live and breathe as a real Gothic building does.” And so he and his team turned to Goodyear, by then an old man and well-scarred from decades of losing battles with his critics.

“When they first approach Goodyear, he almost leaps out of his armchair: ‘What can I do to help you?’” Tallon says. “He is finally vindicated in his lifelong quest.”

Correspondence with Goodyear indicates that Frohman did indeed include “refinements” in his construction of the cathedral. Jim Shepherd, director of preservation and facilities at the cathedral, points out some of its quirks. There is a small misalignment between the nave and the choir, which results in a slightly trapezoidal shape to the large bell tower that rises above the intersection.

Although the church is undergoing reconstruction to repair damage from the 2011 Virginia earthquake — the nave is covered with netting and construction platforms — Shepherd also stresses the building's resilience and durability.

### Evolution of cathedrals

About two weeks after Tallon scanned the cathedral, he had enough sense of the data to make some conclusions. The “crossing piers,” meaning the main support columns that hold up the soaring space where the nave, transept and choir come together, do indeed bow outward, quite dramatically as they rise up, in some cases as much as seven centimeters. But despite speculation by some scholars that the cathedral is full of Goodyear's quirks, Tallon found the building to be “unusually, I'd even say extraordinarily, in plumb.”

That's not entirely surprising given that it is younger than 100 years old and was built by master architects with a detailed knowledge of the engineering and construction challenges of Gothic architecture.

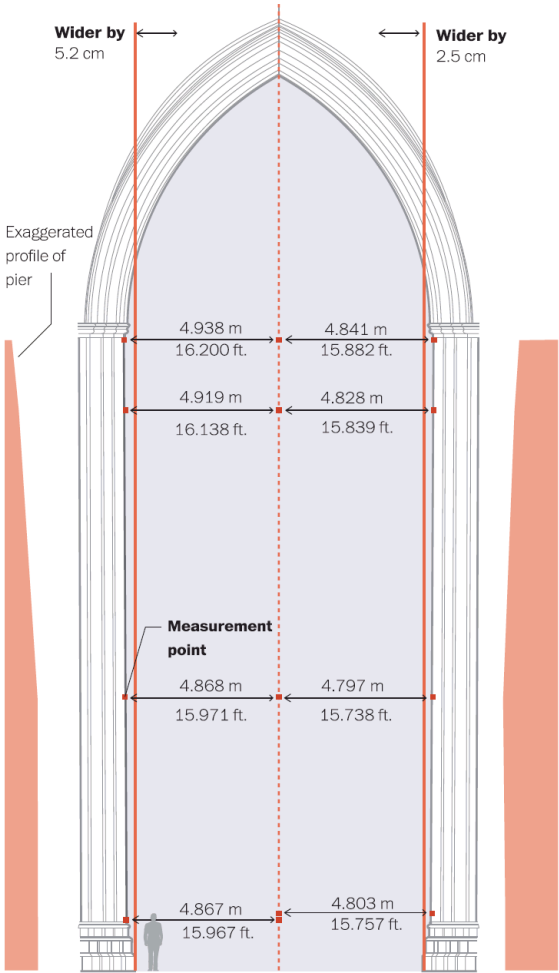
But another reason may be as old as architecture itself: What sounds good in plan, and looks good on the drawings, may not be possible once you start actually building the thing. The bulk of Tallon's research is devoted to

### Cathedral's imperfections

The two main anomalies built into the Washington National Cathedral are imperceptible to most visitors, but they were obvious when precisely measured by an expert on Gothic architecture.

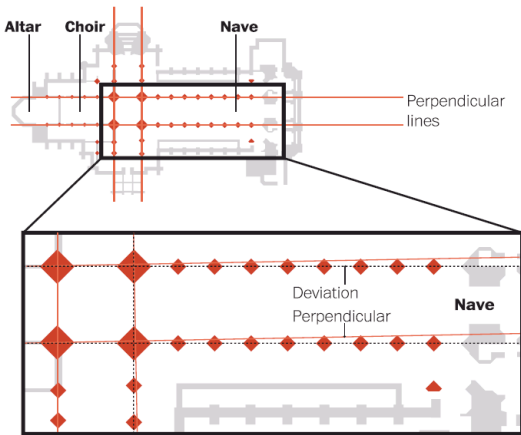
#### Bowed columns

The space between piers at the center of the cathedral widens as the piers rise. The largest difference is on the west arch, a total of nearly eight centimeters, or about the width of three U.S. quarters.



#### Misaligned nave and choir

The cathedral interior, viewed from above, is in the shape of a cross. If you drew perpendicular lines on the cross, you'd see that the choir is slightly askew from the nave.



Source: Andrew Tallon, Vassar College professor of Medieval art and architecture  
BONNIE BERKOWITZ AND ALBERTO CUADRA / THE WASHINGTON POST

documenting the evolution of historic cathedrals, the improvisatory steps the builders took to compensate for the natural tendency of stone to shift and move, including the substantial use of iron to hold things together.

And that same craftsman's wisdom — embodied in generations of anonymous craftsmen and builders — may have limited the degree to which Goodyear's refinements were actually implemented in Washington.

“They must have quickly realized that to build massive structures such as these deliberately out of plumb was a considerable challenge, leaning outward from the center of the crossing as they do,” Tallon writes in an e-mail. “Which I think goes a long way toward explaining why vertical ‘refinements’ weren't implemented elsewhere.”

But Goodyear's mark is definitely on the building, which allows visitors to ponder an interesting question: While he may have been wrong about the intentions of the great Gothic architects, was he in fact right about the inherent beauty of imperfection?

A curious analogy might be the difference many people heard between digital and analog sound when compact discs were first introduced more than 30 years ago. The complaint then was that digital sound was too perfect, too hard-edged and bright; in short,

too “modern.” Old LPs, it seemed, had a more natural acoustic, a finer sonic patina.

That debate has mostly died out as digital sound was tweaked to sound warmer and people became more accustomed to it. But there is a complicated mix of psychology and perception about what makes things we know to be old seem more authentic than modern reproductions or innovations.

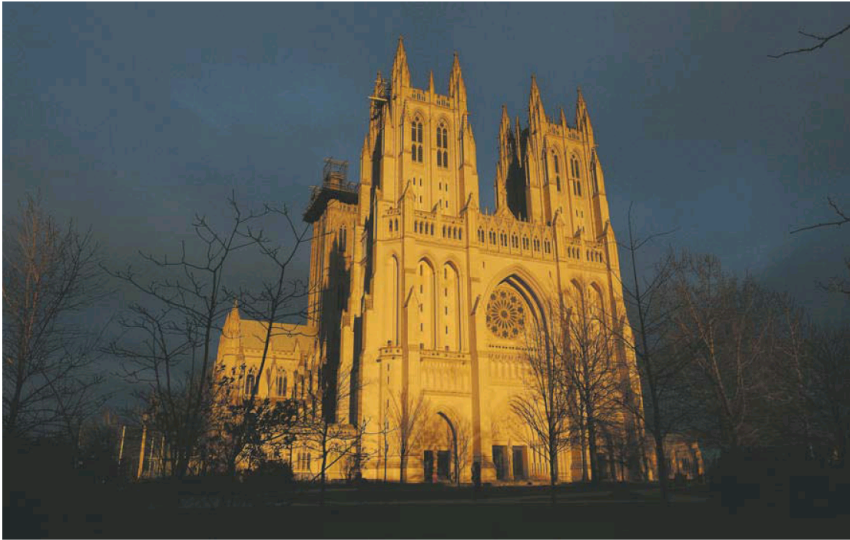
“I would say that Goodyear and Frohman were right about the aesthetic,” Tallon says. “When you go into a 12th- or 13th-century building, you feel it is alive.” Whether or not Frohman's efforts to build some of that organic life into the Washington National Cathedral succeeded is, of course, a matter of subjective opinion.

And Tallon's fully aware that his work may complicate the question, because once you are aware of the imperfections, their impact on your sense of beauty may be altered. So he'd like to know more about the perceptions of people who are innocent of any knowledge of the strange story of Goodyear and his misguided “refinements.”

“The person who doesn't know, that's the person I wonder about,” he says. “To what extent do you feel the irregularity?”

It is, unfortunately, the sort of question that can't be answered with a laser scanner.

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The setting sun helps illuminate the Washington National Cathedral. Tallon says he is looking for “the smoking gun” to demonstrate William H. Goodyear's influence on its design.