



Will Art-Filled Florence Come Tumbling Down?

A spate of nearby quakes has officials worried; the steel-shell plan for Michelangelo's 'David'

BY JOHN HOOPER

FLORENCE'S CATHEDRAL, with its immense, octagonal dome designed by Filippo Brunelleschi, is the great symbol of a city filled to the brim with masterpieces. But how safe are the artistic treasures of this Renaissance capital?

The past year has seen an upsurge of seismic activity in central Italy. Last April, a minor earthquake (3.6 on the Richter scale) shook Florence forcefully enough to prompt damage checks to buildings. The epicenter was less than 25 miles away. Last August, about 300 people died in an earthquake that hit an area including the town of Amatrice, less than 200 miles away. By January, there had been more than 40,000 further tremors.

Such threats have always loomed over Florence, which is close to the intensely seismic

Apennine mountains. On one side of the cathedral, a foot-wide fissure runs through the stonework. Experts disagree about whether the cracks appeared naturally as the building settled down, as a direct result of a 1453 earthquake, or both. But another severe earthquake could wreak untold damage on the building.

The recent scares have stirred up debate over how to protect Italy's cultural heritage. Italians still remember the quakes that in 1997 demolished part of the basilica in Assisi, 100 miles to the southeast. They severely damaged several frescoes about the life of St. Francis painted by Giotto (1266-1337), who heralded the Renaissance, though they have since been largely restored.

Experts cannot predict when the next quake will strike Florence or how big it will be. The city's treasures include major museums including the Uffizi Gallery, the Pitti Palace, the Galleria dell'Accademia and the Bargello, as well as the Basilica of Santa Croce (which had a starring role in the movie "A Room With a View") and the Medici Chapel. The city's university is preparing a study of which districts of the city are at greatest risk.

Fretting about a bell tower and a hero's ankle.

The most fragile treasure of all is likely Michelangelo's 1504 "David," in the Accademia. Almost 17 feet high, weighing more than 6 tons and carved from marble of poor quality, the statue stood outdoors for more than 350 years. In 2004, researchers found cracks in the biblical hero's left ankle. Some fear that even a

FLORENCE'S CATHEDRAL is among the city's art treasures at peril if there were a major quake.

modest earthquake could bring the most celebrated statue of the Renaissance crashing down.

Two years ago, Italy's heritage minister announced funding of more than \$200,000 for a new statue base that would be more earthquake-resistant. Cecilie Hollberg, who took over in December 2015 as the director of the Galleria dell'Accademia, is skeptical of the project, which still hasn't begun. She says, "If the statue stands up to the tremors because of the plinth, what is the point if the ceiling falls" on the David?

In December, the Opera di Santa Maria del Fiore, the organization responsible for maintaining the cathedral's building complex, held a one-day conference of experts that concluded with a statement lamenting "serious levels of uncertainty" over government regulations and how they applied to Italy's monuments.

Among the participants was the opera's vice president, Francesco Gurrieri, who is overseeing a "thorough checkup" of another vulnerable structure: Giotto's towering, slender campanile, a bell tower that stands alongside the cathedral. "We don't know for certain the depth or shape of the foundations," says Mr. Gurrieri.

What is known is disquieting: An aquifer runs just over 30 feet beneath the bell tower. Mr. Gurrieri plans to use radar to peer under the ground, using a technology first developed in the Vietnam War to discover Viet Cong foxholes. He expects to complete the survey within a year.

For years, Fernando De Simone, an architect, has been campaigning for Florence to build an anti-seismic museum to house its cultural riches. Failing that, he argues, David's custodians should consider building a steel shell into the walls of the spacious, rounded alcove in which the statue is displayed.

Ms. Hollberg is skeptical of that idea too. No one, she says, understands the complexity of the situation. David may be the world's most admired statue, yet surprisingly little is known about it. "No one can even tell me if it is attached to its pedestal," she says. If the statue had to be lifted, how could that be done safely? If work had to be carried out in the alcove, could the statue withstand the resulting vibration?

Ms. Hollberg has a "medium- to long-term plan" to assemble an international group of experts to advise her on how best to protect Michelangelo's towering masterpiece. She has been bombarded with ideas for what needs to be done. "I have the feeling a new expert is writing to me every week," she sighs.

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