Notre Dame’s repairs will take years

Firefighters have salvaged the Notre Dame Cathedral’s main structure. What’s next? Resurrection. Architecture experts expect the repairs to take decades and require a delicate balance of restoring its unique look with fortifying the structure for the future.

“This is going to be a slow process and one that’s going to take a lot of time,” said John J. Casbarian, dean emeritus at Rice University’s School of Architecture, where he oversees the school’s program in Paris. Most of the work in rebuilding the cathedral will be on reconstructing the roof, Casbarian said, and he expects it to take at least 10 to 20 years.

Luckily, the church has an extremely accurate documentation system for everything inside, he says. “It’s just a matter of figuring how to manufacture and replace every piece that was destroyed.”

Over the years, historians and archaeologists have made exhaustive plans and images, including minutely detailed, 3D, laser-scanned re-creations of the interior.

Casbarian expects it to take so long because of not only the large area that was destroyed, which will require a lot of scaffolding, but also the level of craft work it will require to reconstruct each piece lost. “A lot of construction is covered up so that you don’t actually see it. In buildings like this, you see everything,” he said.

Jean-françois Bédard, a professor at Syracuse University’s School of Architecture, said that many French Gothic cathedrals, like Notre Dame, were originally built thin, slender and fragile, which has meant that restoration has been ongoing throughout their history.

“It’s not like this monument is fixed in time and suddenly destroyed. It’s an ongoing process,” he said. Bédard also expects the rebuild to take at least 20 years.

After the French Revolution left the cathedral in a state of disrepair in the 19th century, restorers Eugène-emanuel Viollet-le-duc and Jean-baptiste Lassus comprehensively rehabilitated the structure, Bédard said. It was Victor Hugo’s 1831 novel “The Hunchback of Notre Dame” that largely sparked interest in the renovations at the time, Casbarian said.

Viollet-le-duc did much of the work restoring the building’s roof, and he also designed the spire that collapsed Monday.

That restoration work dramatically changed the character of the cathedral, Bédard and Casbarian say, and much of the cathedral remained in its 1800s condition.

French officials haven’t said whether they will rebuild the roof with wood, as it had been since Viollet-le-duc’s work, or a more fireproof material like stone. Both architects say some sort of modification with fire prevention in mind would be needed to prevent another blaze. However, the building’s stone structure with flying buttresses allowed the main structure to remain intact Monday.

“Because the flying buttresses are outside, they didn’t have any heat to cause expansion, and so the structure, I presume, is pretty sound,” Casbarian said.