

BUILDING BRIEFS

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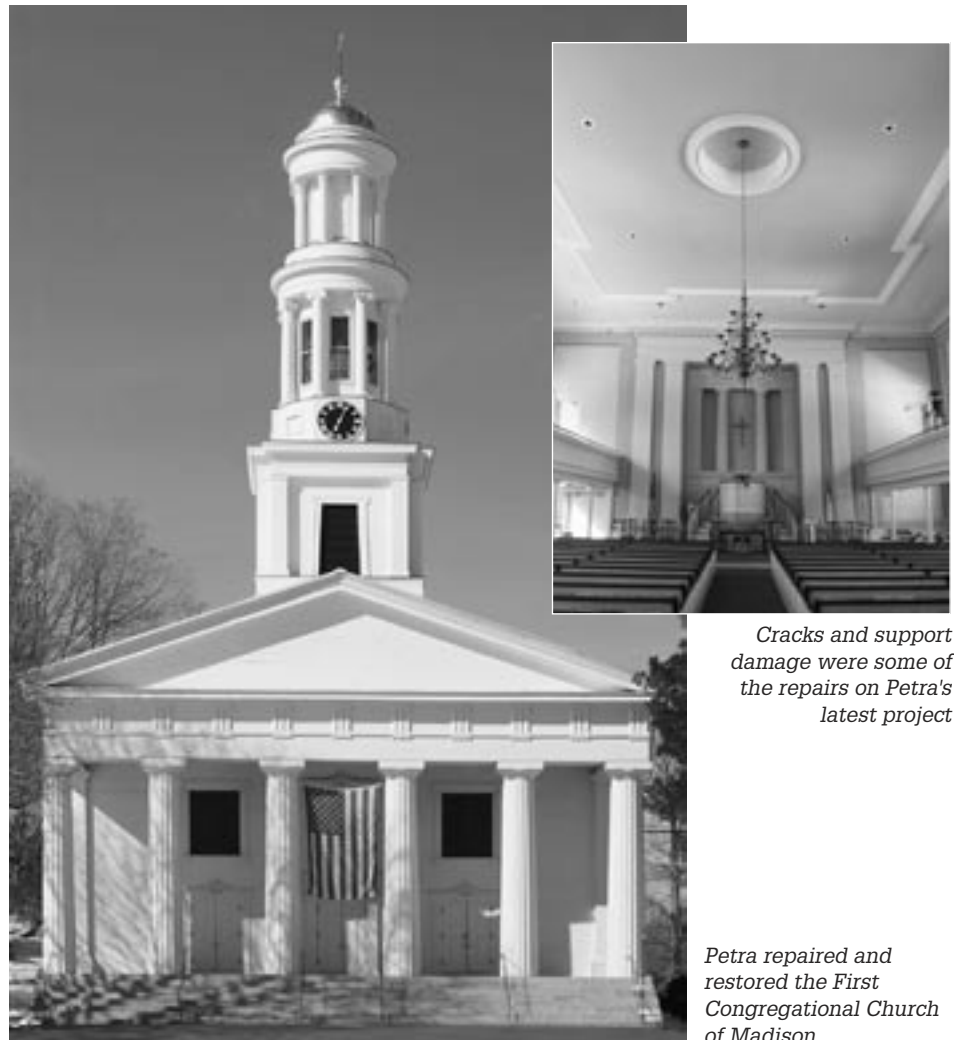
A Project With A High Calling

Walter Stone made yet another climb up into the ninety-seven foot tall church steeple. He inspected its condition and confirmed the bad news. The outside elements were no longer being held at bay. The cladding and flashing of the tall steeple were in definite need of repair. In fact, when the wind whipped up, Walter could actually feel the steeple swaying. As the Sexton of the historic 166 year old Meeting House of the First Congregational Church of Madison, Walter now had to deliver the difficult news, and he did so.

In response to the Sexton's report, the Church Council asked its Properties Committee to look into the issue. They learned that the Church required much more than some simple repairs. The Committee took on the arduous process of interviewing architectural and engineering firms to provide a course of action to address the problem.

The steeple is a somewhat unusual sight to begin with, since it is disproportionate to the size of the overall church building. This is because the steeple was originally used as a navigational guide by boats and vessels, which have line-of-sight to it from Long Island Sound, just across the way. Over the years, the sheer weight of the steeple and constant shoreline weather exposure took their toll, weakening the structure.

"During the exploratory and learning mode, we were greatly helped by Petra Construction, in particular with just trying to get our hands around



Cracks and support damage were some of the repairs on Petra's latest project

Petra repaired and restored the First Congregational Church of Madison

dealing with the scope of the project. We were looking at a significant restoration project and dealing with it as an historical issue. What's more, there would be a range of craftsmen, subcontractors and specialists that

needed coordination. Petra took time to walk us through the process. It became very clear to us how vital it would be to develop the entire program under a construction management approach. It made a great deal of sense to us," said

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Mark Taragowski, who chaired the Church's Meeting House Construction Committee.

After cracks were discovered in the plaster ceiling of the sanctuary, the project took on a new urgency. The project began its first steps with Boston-based engineering firm Simpson, Gumperts & Heger, who conducted an investigation of the structural condition of the roof trusses and steeple. They had an engineer on staff who was essentially a wood scientist, with a background in structural failure studies in church structures. In addition, George Torello Engineering of Essex was brought in, and Petra Construction Corporation of North Haven was contracted as the construction management firm.

"The findings were discouraging, due to the expansive scope of the damage. The trusses and girders supporting the steeple and roof were of immediate and serious concern," added Mark. Transfer girders and weight bearing beams were rotted. The roof (which was some ninety-five years old), portico, bell tower and steeple were severely damaged due to age and deterioration. The project required both repairs and restoration work.

Petra went into action and set up shoring towers inside the Meeting House to support the weight of the 60,000 pound steeple. Safety areas were established, including catwalks, railings and other important features that would properly protect the

workers. In the course of the project, the engineers discovered a broken beam—the primary cantilever that supported the building's portico. The project required very specific skills and approaches, particularly due to the age of the structure. "The engineers, with help from Petra, developed an entire attic plan that moved the work forward," noted Mark, "and their ability to think on the fly is a big part of what made the work successful."

The project was first thought to be a steeple repair project, but it quickly escalated into an historic structural restoration. The congregation wrestled with what course of action to take. Petra was instrumental in aiding the committee through the process by laying out all of the options available to them and the associated costs and risk factors that accompanied the varied courses of action. Even in light of the major investment required, the congregation decided to restore the building properly, including the steeple. They believed strongly in the historical significance of the building. The Church formed a Capital Campaign Committee to raise funds for the over \$2 million project.

One of the key questions was how to accomplish the restoration and repair of the steeple. Petra provided several options: restoring the steeple in place, removing it and then replacing it, or building an entirely new steeple. Petra was asked to develop a plan to restore the steeple in place, thereby saving

time, money and historical value.

"There was no blueprint for this work, so Petra developed a process to make it all happen and did just that. Their ability to handle situations that came about was what made such a difference in the work, which would otherwise have been overwhelming," noted Mark.

The details, scheduling, logistics, materials, historical demands, and budgets were paramount to manage, especially in such a unique project. Mr. Taragowski, the Committee and the congregation were especially pleased with Petra's performance and their ability to coordinate all aspects of the work. "We were very fortunate to have Petra, because as the project was underway, more unforeseen difficulties, such as rotted beams, were discovered. Even when these surprises were uncovered, the work needed to continue and Petra addressed every issue with great energy and skill," said Taragowski. With restoration complete, the Church will enjoy many more decades as a reminder of the historic past. It's a part of the town's legacy and an integral part of its landscape.

If you are facing a challenging construction project and you want to ensure that it meets your expectations, then please contact Mr. Guido Petra, President, or Mr. Terry Wooding, Executive Vice President, at Petra Construction, 203-865-6043, today. They can provide options that may help your project progress more smoothly and cost effectively.

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