

Access for Steeple Restoration

From rigid scaffolding to a swinging bosun's chair, determining the type of access needed for steeple repairs requires careful evaluation that can save thousands of dollars.

Steeple and roof surfaces in high, far away corners often suffer from routine inspection and deferred maintenance due to the danger and expense of working on locations with limited access. Eventually a small leak can turn into a larger problem making steeple repairs imperative and forcing congregations to grapple with the expensive task of providing safe access for workers.

These costs can be surprisingly high, often amounting to \$50,000 or more, and may even exceed a contractor's price for performing the restoration work itself. In the worst cases, steeples are removed because of the daunting cost of restoration or replacement, radically diminishing the character of a house of worship as well as possibly causing long-term structural problems.

Rigging and scaffolding refers to a wide range of equipment used to provide access for workers, materials, and equipment at various locations on a building. Common types include metal pipe scaffolding built upwards from the ground or a structurally sound roof surface, and swing stages hung with ropes from mechanical hoists fastened securely to a structure. The "duty rating" refers to the weight of workers, equipment, and materials that the scaffolding must hold. Scaffolding design must also provide ways for workers to climb to their platform, work safely, raise and lower debris and materials, protect the building, and safeguard the public from falling objects. Sidewalk bridges made of pipe scaffolding with wooden or metal coverings above pedestrian walkways, or netting hung on outriggers that projects from the facade are two ways of protecting the public from debris.

Restoration contractors often turn to experienced scaffolding companies as subcontractors for the design and installation of complicated scaffolding systems. "Scaffolding options depend on characteristics of the building and site, and the type of work to be performed," says Ken Buettner, President of York Scaffold Equipment Corporation in Long Island City, NY. Steeples and towers typically require access from a roof to reach one or more sides, "but not all roofs can support the weight of heavy-duty scaffolding," adds Mr. Buettner. "You may need to shore the roof structure from the inside to transfer the load to the basement."

Fortunately, there is an alternative to the sky-high cost of conventional access to steeples. Steeplejacks are craftsmen specially trained to perform their work safely in high places. They work from bosun's chairs (a one-person seat that is suspended by a rope), swing deck staging, or lightweight platforms supported from steeple bases or hung from cables wrapped around the steeple itself.

"We've developed a special lightweight scaffold that allows us to rise above steeple tops to remove and rebuild upper portions of spires, whether stone or wood, even after lightning fires," says Charles Tanguay, President of Upstate Aerial Contractors (UAC) of Canandaigua, NY, a firm that specializes in repairing steeples and difficult to reach roof segments. UAC performs the full range of restoration work: copper, metal, and slate roofing; masonry work; painting; millwork and structural repairs; decorative metalwork; and lightning protection. In addition to UAC, several steeplejack companies from New England perform work in New York State as do a few general restoration contractors that have aerial rigging skills.

The current steeple restoration at St. John's Lutheran Church in Greenpoint, Brooklyn (Theobald Engelhart, 1897) is a case in point of selecting rigging methods that can bring substantial savings compared to conventional scaffolding. In 1996, a storm blew off a six foot by eight foot portion of the steeple's copper sheathing and wood decking. Since then, the Landmarks Conservancy and preservation consultant Ed Kamper have assisted the congregation in developing a scope of work. Yankee Steeplejack Company (YSC) of Concord, MA recently started the restoration which includes repairing the wood sheathing, replacing the deteriorated copper with slate (the original material covering the steeple) and installing a new finial.

Since a layperson or building professional can obtain only limited views of steeples with binoculars from the ground or from upper stories of nearby buildings, a more "hands-on" inspection is often needed to develop scopes of work, cost estimates, specifications, and drawings for bidding.

Steeplejacks can be retained to help to conduct these type of close-up inspections, providing quick, relatively inexpensive access to steeples and other difficult-to-reach locations. This service can be valuable in tracking down leaks, documenting crack patterns in masonry, inspecting mortar joints for deterioration, or evaluating the performance of previous repairs. They can even use ultrasonic measurement devices that can predict the remaining useful service life of metals.

Vertical Access of Ithaca, NY is one such firm that employs a lightweight rigging system for quick, non-destructive access to high or difficult-to-reach locations. The company performs inspections and tests, prepares conditions surveys, and undertakes emergency repairs. Drawings, photographs, and video are used to document findings.

Kent Diebolt of Vertical Access explains, "A crane high enough to reach many steeples can cost tens of thousands of dollars to rent. A boom lift ties up traffic and may not be able to provide close enough access due to the site or building configuration. Avoiding these costly, cumbersome methods by using lightweight rigging enables us to provide information about building conditions in high places."

Steeplejacks can provide an alternative to the use of conventional scaffolding that can save substantial sums in certain projects. Each job must be evaluated individually to determine the most economical means of providing safe access for the type of inspection or restoration work required. If the job seems suitable for a steeplejack, design it accordingly, and look for firms that can handle as many aspects of the work as possible under a single contract for better coordination. Professionals with experiencing working on steeple projects can all provide valuable input on the pros and cons of various methods and their costs.