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History revisited

When Independence Hall needed refurbishing, Superior Scaffold Services got to work. ALH reports

With a completion date of 1753, you could say Independence Hall was long overdue for a little TLC. After all, the Philadelphia-based building was the birthplace of the United States Declaration of Independence and the Constitution.

Designed by Edmund Woolley with help from Andrew Hamilton, Independence Hall was built between 1732 and 1753 and its current tower (which housed the Liberty Bell), designed by William Strickland, was built in 1828 after the original structure was deemed unstable.

Over the last 100 years, weather has taken a toll on the structure, causing the outside 'skin' of the building to decay and rust. A renovation was necessary.

Philadelphia-based Superior Scaffold Services, Inc. was called in to assist on the \$4.4 million, 14-month project by providing system scaffold for the job. The project's focus included repointing, replacing brick, installing and replacing wood shingles and restoring and painting window sashes, doors and frames.

"The original structural system will be supplemented and strengthened with modern materials," says Guy Bianchini, chief executive officer of Superior Scaffold Services. "The wood and supporting rods that kept stability will be removed and replaced. The entire façade will get an overhaul including all of the glass, copper and wood artifacts, the clock faces, the siding



PHOTOS BY ERIK HIGHLAND

and paint. Cosmetic interior renovations will be completed. Other systems will be completely and carefully replaced including HVAC, sprinkler and electrical systems. Even the weather vane and the golden ball that sit on top will be re-gilded."

But it wasn't going to be easy.

Task at hand

Superior Scaffold Services' design team had major challenges when it came to erecting and building the 172-foot-tall scaffold that surrounded the famous structure's clock tower. Since they could only touch the building in a few points due to the fragile nature of the structure, Superior engineers had to design the scaffold for maximum stability.

According to Superior Engineer Bob Robinson, the team needed to erect the scaffold so that workers could get to every aspect of the building during renovation, however, artifacts such as copper urns, had to remain in place. This meant the weight bearing sections of the scaffolding had to be shifted to accommodate the work.

Another challenge Superior also faced was providing workers with a clear and stable platform from which they could conduct the refurbishing of the giant, glass clock faces. The scaffold was therefore wrapped around the structure continuously, which also added stability.

To meet the upper roof's load that was 40 pounds per square foot, Superior had to reshore under the roof in order to support the scaffold, which added an additional 80 feet in height. Also, the placing of the scrim was an issue because it needed to be designed so it was



permeable enough not to violate strict wind load requirements due to the age of the building. They also widened the footprint of the scaffold to add stability.

The decorative polyester scrim, donated by Friends of Independence, was a series of carefully designed and printed panels that were assembled to look like the real Independence Hall. There were 150 single panels in all, which were labeled and graphed out ahead of time so workers knew where they had to go on the grid.

"Strapping what amounts to a sail to scaffolding around a 250 year old building is dangerous business," Robinson says. Just like a sail on a boat, the wind will pull the scrim and try to move the scaffolding in a number of directions. So, Superior Scaffold Services engineered the scaffold to withstand tremendous pressure while keeping the integrity of the building stable beneath, quite a feat for a structure that stands 12 stories into the sky.

After nine weeks of erecting scaffolding, everything was in place.

ALH

By the numbers

PROJECT COST: \$4.4 million
SCAFFOLD ESTIMATED COST: more than \$300,000

PROJECT DURATION: 14 months
SCAFFOLD ERECTION TIME PERIOD: Nine weeks

SCAFFOLD PARTS AND PIECES USED:

- 750 frame equivalents
- 2,200 plank (both steel and wood)
- 250 side brackets
- 130-feet of stair
- 150 decorative scrim panels
- 1 BetaMax Maxclimber 1000 hoist