

# CONSTRUCTION TODAY

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## Demolishing Stereotypes:

The Evolution of the  
Construction Industry  
Workforce







# VIBRATION MITIGATION

SCAFFOLDING FOR 14TH AND 15TH CENTURY BUDDHIST MURALS AT THE UNIVERSITY OF PENNSYLVANIA MUSEUM OF ARCHAEOLOGY AND ANTHROPOLOGY

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Penn Tower

tall, 14th/15th century Chinese Buddhist wall murals from a Ming Dynasty monastery. These murals were reported to have come from Guangshengsi Monastery in southern Shanxi Province, China.

It's not often that we get a call for scaffolding one project right next to another, but that's just the case here. We are currently providing scaffolding and shoring all over the demolition of Penn Tower for the new Patient Pavilion at the hospital of the University of Pennsylvania.

But the unique thing about this job isn't just that it's located directly behind Penn Tower at the University of Pennsylvania Museum of Archaeology and Anthropology, but it's that we were called in to provide scaffolding services for restoration crews to dismantle two giant 16-foot-



Dismantling the mural at the Penn Museum

And what's even crazier is that they are being moved because of the demolition of the building right next door. Yes, you heard right. These giant murals are just two of thousands priceless artifacts that are being moved so the vibrations from the heavy equipment next door doesn't damage them. They, among others, are being moved into storage for safe keeping while the old building comes down and the



new hospital complex goes up. It seems that the old Penn Tower and the Museum are in such close proximity and share the bedrock and they are particularly worried about the vibrations when crews start digging down for the footers.



One of the 14th/15th century Chinese Buddhist murals

Vibration specialists have been called in and monitoring sensors have been placed throughout the museum to keep a vigilant eye. Senior conservator, Lynn Grant, and her team of specialists have had a giant task on their hands.



Estimator Pat McAndrew about to open the 2-by-2-foot access port

behind the murals so crews could get access to detach each panel one by one and move them into storage. And although it seems straight ahead, there isn't much room back there AND we could only get the scaffold through a tiny trap door at the base of the mural.

Estimator Pat McAndrew had to open the 2-by-2-foot access port. And it was through that access way that our crew had to hand in and assemble this scaffold. Originally we were thinking standard 9-foot

So, you see, this job isn't as massive in size as the Penn Tower demolition but it's just as important. These murals were brought into the Museum in the early 20th century in pieces and then assembled onto a type of scaffolding themselves to keep them in place. When the murals were taken off of the monastery walls, they were assembled into larger panels and backed with plaster and wood for support.

These larger panels are the separate segments visible today. We had to provide scaffolding be-

hind the murals so crews could get access to detach each panel one by one and move them into storage. And although it seems straight ahead, there isn't much room back there AND we could only get the scaffold through a tiny trap door at the base of the mural.

And on top of everything, we had to be super careful to not touch or damage the mural in any way. We specialize in working with delicate historic buildings and structures and this was no different. We've done sensitive work in the Museum before helping install 1,700-year-old Roman Mosaic tiles exhibit.



Specialist Emily Brown applies a dilute adhesive to secure unstable paint on the surface

But before crews can remove the panels, conservation specialists like Emily Brown have to stabilize the ancient mud and paint.

The murals are painted on a mud surface and follow a basic mud-ground-paint construction pattern. Essentially, there are two different mud layers under these Buddhist murals. But I won't get into too much detail; these conservators are the experts.

Founded in 1887, the museum first opened at its present site in 1899. It houses some of the world's great archaeology treasures encapsulating and illustrating the early cultures of ancient Babylonia, Egypt, China and Native America, dating from as far back as 2600 B.C.

Superior Scaffold was proud to lend a hand with these ancient artifacts — and to help make way for the new patient pavilion next door. It just goes to show how no job is too big or small for us. We pride ourselves on our ability to work with delicate objects and structures.

We hope that the Penn Museum of Archaeology and Anthropology and its vast collection of artifacts are all safe and sound and not affected by the demolition next door. This is a tremendous Museum and should be seen by everyone in the Philadelphia area. ■