

# PILED RIVER

"A Driven Pile ... Is a Tested Pile!"



## Big Changes for Lady Liberty

Simpson & Brown takes on the foundation pile package for the new museum

Inside:



▼ PDCA's GeoCoalition Meeting

▼ Balfour Beatty Infrastructure Inc.'s Internal Education Program

# BIG CHANGES FOR LADY LIBERTY



Jobsite photos courtesy of Simpson & Brown  
Statue photo by Gary Blakeley / Shutterstock.com

The Junttan PM23 piling rig has the same proven features as the bigger Junttan machines. Its rugged design makes it a safe and reliable rig even in the most demanding working conditions.



## When completed in 2019, a new expansive Statue of Liberty Museum will accommodate more visitors than ever

By Lisa Kopochinski

The Statue of Liberty has been a symbol of freedom and justice for more than 130 years since the French government gave the United States this icon in 1886 as a present to commemorate the 100th anniversary of the American Declaration of Independence.

With approximately 4.3 million visitors annually, plans for a new Statue of Liberty Museum were announced in fall 2016 that will provide the opportunity for even more visitors when it is completed in 2019.

Located in the middle of the Hudson River, next to Ellis Island, the current museum can only accommodate a fraction of Liberty Island visitors, while the new museum will span 26,000

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The Junttan PM23 pile driving rig is a special piling rig designed for jobsites where a long leader reach is needed. It is an ideal rig for bridge, port and railroad worksites.

square feet and address three main components – accessibility, education and sustainability – by:

- Creating a new cultural attraction and more engaging tour at Liberty Island
- Enhancing access and educational content for school groups that tour annually
- Fostering a sense of inclusion for all visitors, regardless of physical limitations
- Offering a venue to enjoy performances and events hosted at the Flag Plaza
- Preserving existing open spaces for public enjoyment

The new museum is being designed to engage visitors through state-of-the-art exhibits, as well as a significant collection of cultural artifacts. A green roof sown with Native Meadow species and spanning 20,000 square feet will double as a viewing area looking on to downtown Manhattan and, of course, the Statue itself.

Designed by New York-based Studio FXFowle, the 26,000-square foot building – with an estimated budget of \$70 million – will offer better circulation to accommodate the rush of tourists that disembark from the ferries, which arrive two or three times an hour. Approximately 15,000 square feet will be dedicated to exhibitions showcasing the statue’s history, legacy and construction details. Additional spaces will house a gallery, immersive theater, bookstore and offices. The museum will also be able to accommodate up to 1,200 visitors per hour – double the current capacity.

**Pile driving challenges**

For the pile driving aspect, PDCA member Simpson & Brown, Inc., a company specializing in marine and land construction

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located in Cranford, N.J., was contracted by Phelps Construction Group for the Statue of Liberty Museum foundation pile package.

Budgeting for the project started more than two years ago, with Simpson & Brown starting the scope of work in April of this year. The team completed their portion of the project in June.

“There was a total of 254 HP1 10x57 ASTM A572 Gr. 50 at 45 LF with APF driving shoes attached to the bottom of each pile,” said Ron Vigliotti, project manager with Simpson & Brown. “The piles had a design load of 75 tons. We installed five test piles with PDA (conducted by GRL Engineering, Inc.) and



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# THE BIG 3

When completed in 2019, the new \$70-million Statue of Liberty Museum will address three main components: accessibility, education and sustainability.

## Accessibility

For the first time since Sept. 11, 2001, every visitor will have the opportunity to experience meaningful artifacts and discover a deeper understanding of Lady Liberty's history. In addition, the museum will create a beautiful and new destination on Liberty Island and greatly enhance the overall visitor educational experience. Increased security measures and the resulting visitor quotas have created severe restrictions on the number of people allowed to enter the monument. This means access to the museum in the pedestal of the Statue has been significantly limited. In fact, 80 percent of the more than 4 million visitors annually are unable to enter the historic pedestal and visit the Statue's museum. These visitors do not have the opportunity to fully learn about this icon through the collection of educational exhibits. The new museum will allow for universal access without restrictive security clearances.

## Education

Limited access to the pedestal results in fewer educational experiences for students and visitors from around the globe. For this reason, the National Park Service has asked the Statue of Liberty-Ellis Foundation to undertake building a new, free-standing museum on Liberty Island. Allowing for universal access, visitors will be able to explore the museum at will – without the need for additional advanced reservations or tickets.

## Sustainability

The new museum embodies an environmentally responsible design and best practices for sustainability. It features material reuse of the existing administration building, a green roof-scape and bird-safe glass exteriors. Local and responsibly harvested materials will incorporate design features that conserve energy and water. The building and landscape will incorporate design features to treat storm water runoff and create habitats for local flora and fauna. Lastly, the museum will make public commitments to sustainability, through LEED Gold Certification and investments in renewable energy. In the aftermath of Hurricane Sandy, it is set above 500-year flood levels and built to withstand hurricane force winds.

completed one compression load test, one lateral load test and one uplift load test.”

Vigliotti says the project was unique in that all materials and equipment had to be barged over from land and lifted onto the island.

“All material was unloaded with Simpson & Brown, Inc. cranes and barges. The Junttan PM23 pile driving rig was loaded



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Simpson & Brown project manager Ron Vigliotti says the project was unique in that all materials and equipment had to be barged over from land and lifted onto the island

and unloaded onto Liberty Island with the help of Weeks Marine, Inc.'s 533 heavy lift crane."

He says the Junttan PM23 was equipped with an HHK5S hydraulic hammer. The rig is owned by Simpson & Brown, Inc. H-Pile material was purchased from Roll Form Group.

As for challenges, the original project design called for mini-piles due to the vibration concerns to historical structures on the island.

"The Junttan PM23 piling rig is equipped with a hydraulic hammer that has a variable stroke that allowed us to install the piles



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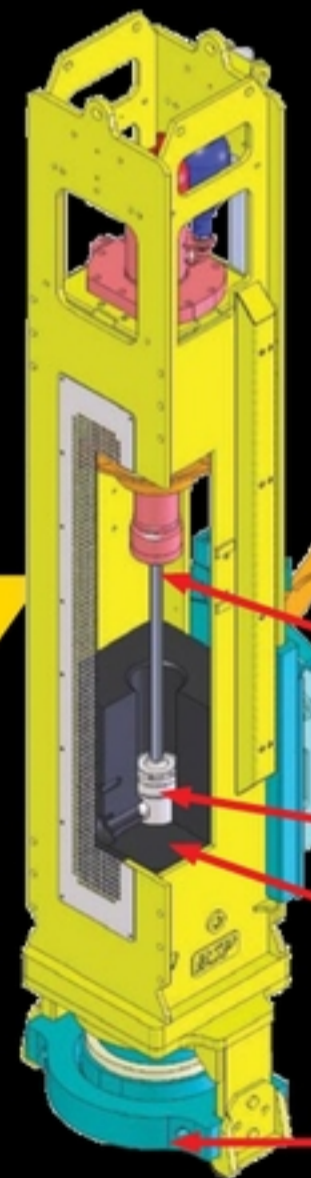


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PDCA member Simpson & Brown, Inc., a company specializing in marine and land construction located in Cranford, N.J., was contracted by Phelps Construction Group for the Statue of Liberty Museum foundation pile package

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# JUNTTAN PM23 TACKLES TOUGH JOBS

The Junttan PM23 pile driving rig is a special piling rig designed for jobsites where a long leader reach is needed. It is an ideal rig for bridge, port and railroad worksites. The rig can be used for driving timber, concrete and different types of steel piles. The recommended hammer weight is from 6,600 to 11,000 lbs. and maximum pile length is 66 feet. Because of the long reach of the leader, piles can be handled quickly and easily, ensuring high productivity.

**“Once the pile built up resistance in the lower soils, the hammer energy was increased to drive the piles to the desired ultimate capacity with little to no vibrations.”**

*– Ron Vigliotti, Simpson & Brown*

through the upper soil layers with a reduced stroke, which in part reduced vibration,” said Vigliotti. “Once the pile built up resistance in the lower soils, the hammer energy was increased to drive the piles to the desired ultimate capacity with little to no vibrations. Phelps Construction Group had an amazing team onsite to help through all challenges. The existing utilities and underground obstructions that were encountered were quickly redesigned by the engineer to keep work progressing.” ▼



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