

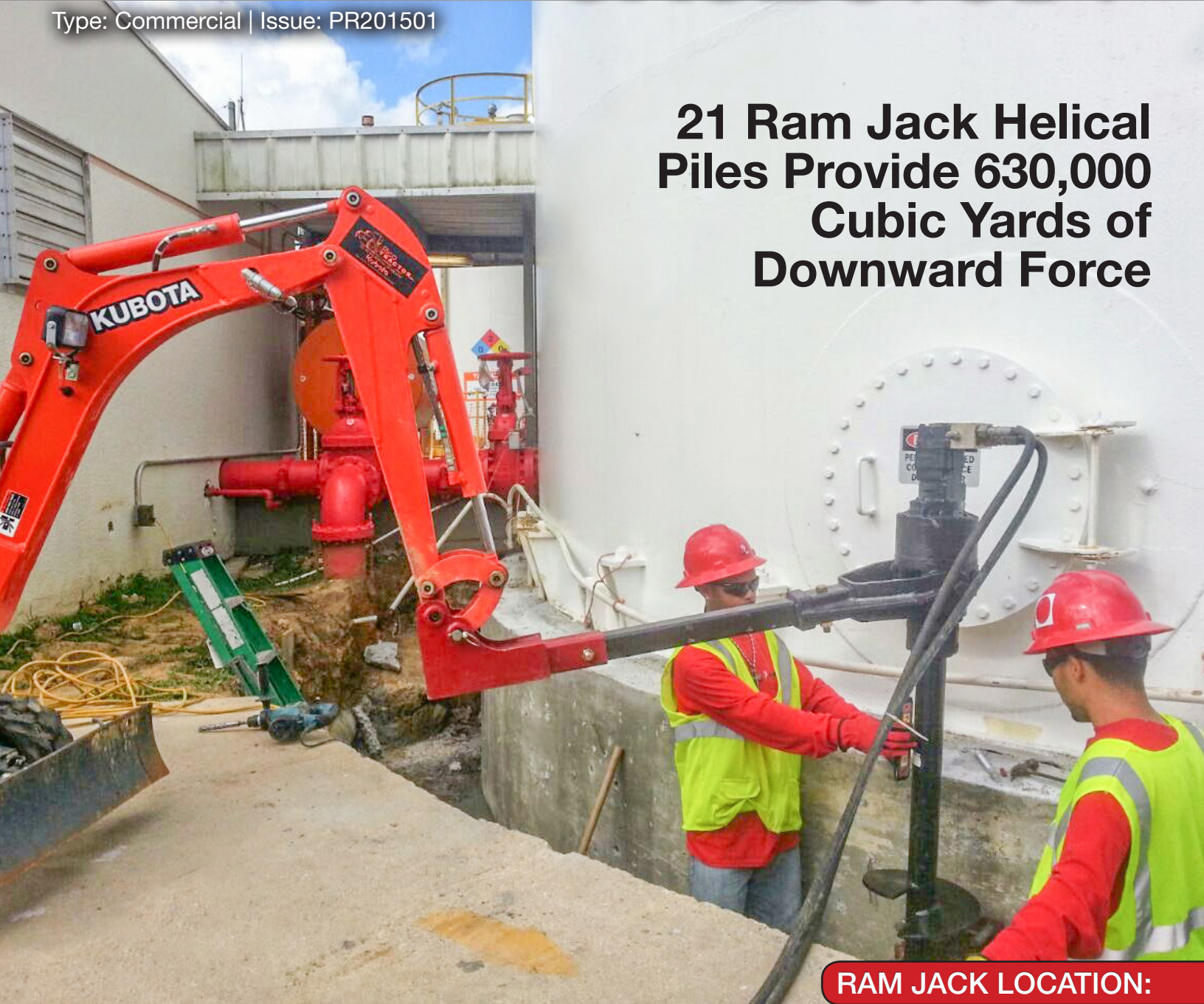


2015

CASE STUDY

Type: Commercial | Issue: PR201501

**21 Ram Jack Helical
Piles Provide 630,000
Cubic Yards of
Downward Force**



RAM JACK LOCATION:

Ram Jack del Caribe

www.ramjackcaribe.com | 787-349-9999

San Juan, PR

JOHNSON & JOHNSON - MCNEIL | SEISMIC RETROFIT

Las Piedras, Puerto Rico

CASE STUDY 2015

Pharmaceutical and chemical manufacturing companies perform all sorts of potentially hazardous activities in their course of business. Many of their activities create fire hazards, so it's important that they are ready should something go wrong. Regardless of whether it is experimentation to find a new product or manufacturing products that benefit the world, safety is paramount. The Johnson & Johnson - McNeil Healthcare LLC pharmaceutical manufacturing plant in Las Piedras, Puerto Rico needed to update its fire protection system to ensure the safety of their employees.

Proven Engineered Solutions.

SITUATION

The Johnson & Johnson - McNeil Healthcare LLC - Las Piedras pharmaceutical manufacturing facility has two fire protection tanks. After API inspection and Factory Mutual Seismic Assessment, it became evident that the stability of the tanks was not up to code, and the tanks could topple over during a seismic event. This would not only injure those around the tanks directly, but it would also compromise the fire protection water supply in a time when the plant would need it most. While foundation enlargement would have normally been an option, the close quarters of the tanks and limited work space made it an impossibility.





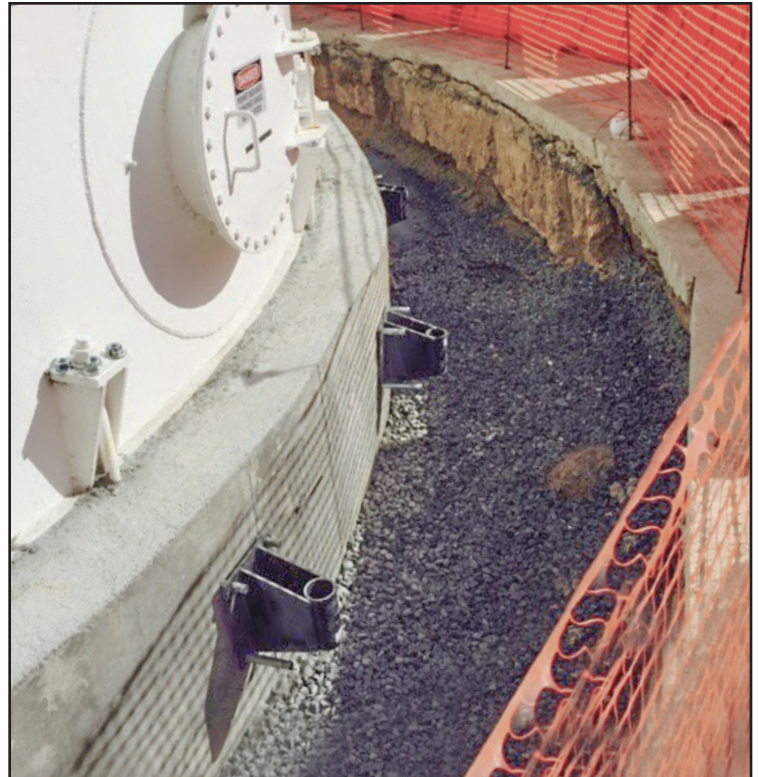
PROPOSED SOLUTION

As an alternative to foundation expansion, Ram Jack del Caribe proposed the installation of 21 Ram Jack helical piles in various places around the tanks as needed. These anchors would provide the needed foundational stability for the tanks to meet modern code requirements and to survive an unforeseen seismic event.

*Ram Jack steel piles
used to retrofit
fire tanks to meet
seismic requierments*

OUTCOME

Factory Mutual Global requirements dictate strict stipulations for fire protection tanks, including a requirement that the foundation of a fire tank should provide sufficient downward force to overcome the upward tensile force on any installed bolts. While the Johnson & Johnson tanks failed to meet this requirement prior to Ram Jack del Caribe's intervention, when Ram Jack was through, the installed helical piles provided 630,000 lbs. of downward force, exceeding the code requirements and providing the equivalent of 155 yd.³ of concrete. When Ram Jack del Caribe finished the job, Johnson & Johnson - McNeil Healthcare LLC - Las Piedras met the insurance code requirements and had a safe fire protection system on which they could rely.





- Engineered Foundation Solutions
- Products Manufactured in the USA
- 50+ Locations Nationwide



Recognized as
Code Compliant
to Meet International
Building Codes



HELICAL PILE DESIGN SOFTWARE: FOUNDATION SOLUTIONS™

Create Profiles

- Simulate soil profiles, including peat
- Anchors with varying diameter and helix configurations
- Vertical/battered/tie-back pile design
- Custom pile design

Mobile-friendly

- Web-based software
- Use anywhere, anytime
- Tablet and PC-friendly

Share & Report

- PDF output for submittals
- Share projects with other registered users

Soil Profile

Profile	Start Depth (ft)	Layer	N	c	a
1	0	Clay	4	500	0.9
2	5	Peat	3	25	0
3	10	Clay	11	1285.5	0.84
4	15	Sand	4	0	0
5	20	Clay	10	1143	0.9
6	25	Sand	15	0	0
7	30	Sand	23	0	0

Project :: /Ram Jack Distribution / Proposed Building Addition::

Anchors

Lead Shaft (OD) Inches: 2-7/8 | Lead Shaft Length (ft): 10 | Extension Shaft OD (Inches) (ft): 2-7/8

Wall Thickness: 0.217 | Yield Strength: 65 | Tensile Strength: 80

Geometric Data / Back Slope

Anchor declination Degree: 90 | Pile Head Position: 0

X-AXIS: 0 0 0 0 0 | Y-AXIS: 0 0 0 0 0

Calculation Run Options: ☐ Omit Shaft Mechanical, ☐ Omit Helix Mechanical, ☐ Omit Shaft Resistance

Estimated Pile Capacity:

Compression Results

Allowable Frictional Resistance: 9.08 kip

Allowable End Bearing Capacity: 25.92 kip

Allowable Pile Capacity: 35.0 kip

Appr. Pile Embedment Depth: 42 ft

Required Min. Installation Torque: 7800 ft-lbs

www.ramjack.com/FoundationSolutions
888-332-9909

