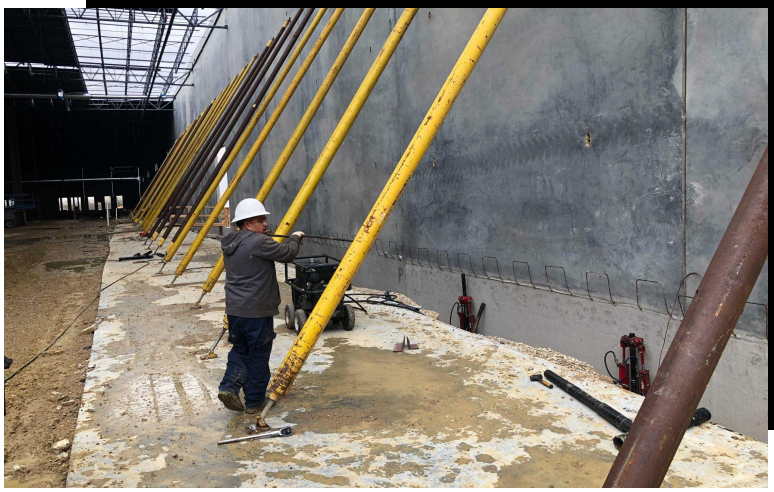
Midlothian Case Study

CASE STUDIES | TX202104



PROBLEM

A 686,000 ft^2 office/warehouse was under construction for Sunrider International in Midlothian, TX. The building consisted of 9 ¼" thick tilt wall panels and steel columns supported on 24" diameter under reamed concrete piers. Soon after the panels were set into place, the panels began to settle. Some of the panels settled as much as 5-inches before the roof had even been installed. Sunrider hired a new construction team to determine the cause of the settlement and to provide the most cost-effective solution.

652 TOTAL PILES INSTALLED

COMMERCIAL

It was quickly determined that some of the existing concrete piers were under designed to support the structural loads of most of the tilt wall panels and the mezzanine. Alpha Testing had worked with Ram Jack and Fortified Engineering Solutions on a similar project so recommended them on this one.

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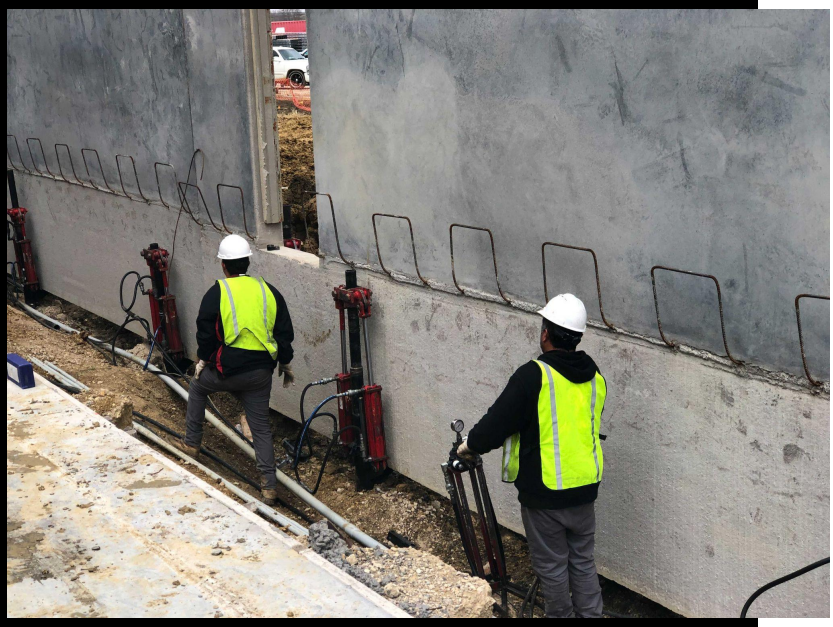
PROPOSED SOLUTION

With the structural loads and soil borings being provided by the EOR's, Fortified Engineering Solutions designed 3 ½" diameter driven piles to raise the tilt wall panels to their proper elevation and prevent any future settlement. James F. Turner Engineers and Alpha Testing also preformed an analysis on the concrete piers supporting the mezzanine columns and found them to be under designed as well. Fortified Engineering Solutions designed 3 ½" diameter new construction helical piles to support the excess mezzanine load that exceeded the capacity of the existing concrete piers.

460 DRIVEN PILES INSTALLED



Tilt Wall Panels:

- (460) RJ 3.5" Driven Piles with a minimum installation force of 90 Kips (45 Kips allowable)
- Remedial 4021.55 brackets with external guide sleeves
- Pile embedments ranged between 30'-35'
- (4) Piles were installed per panel with 110 kip capacity cylinders
- Panels were lifted with Ram Jack piles and hydraulic manifold system
- Piles placed on a maximum of 5' on center, however the pile spacing had to work around the panel joints and the existing concrete piers
- Piles inclusive of ICC-ES ESR 4331
- Piles installed in 22 days

Mezzanine:

- (192) RJ 3.5" Helical Piles with a minimum torque of 14,500 ft-lbs
- 16K Driver with Intelitorque monitoring system
- New Construction Brackets
- 90 Kips Ultimate (45 Kips Allowable)
- (8) RJ 3.5" piles per pile cap (24 Pile Caps)
- Piles inclusive of ICC-ES ESR 1854
- Piles installed in 9 days

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192 HELICAL PILES INSTALLED

OUTCOME

Ram Jack with the team described above kept the project moving forward to avoid additional delays and allow other trades to keep on schedule. This was very important as Sunrider was in the process of relocating their current manufacturing facility from California to Texas.

INSTALLATION OVERVIEW

COMMERCIAL INSTALLATION
RAM JACK TEXAS

PRODUCTS USED
3 1/2 Helical and Driven Piles
Remedial 4021.55 Brackets
New Construction Brackets

PRODUCT TYPE
EXTERIOR AND INTERIOR PILES

TYPICAL APPLICATIONS
Ram Jack's 3 1/2" upset or threaded connection helical piles can be used in tension or compression.

At Ram Jack®, we are focused on providing custom-engineered solutions that meet the unique needs of our commercial clients. You can move forward with confidence knowing we maintain code compliance, providing piles and brackets that reach the highest rating among competitors' products recognized by ESR-1854 & ESR-4331. Our company has the most products recognized by the ICC and boast an ISO 9001:2015 certified manufacturing facility.

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