

Retrofit Helical Piers Support Existing Foundation for Adjacent Addition

Project

United Fire Group

Location

Cedar Rapids, IA

CHALLENGE ▼

A United Fire Group Insurance building in downtown Cedar Rapids, Iowa was planned for a remodel and new addition. The existing building was a three-story brick structure with a poured concrete foundation wall at basement level. Excavation for the new addition first required a soldier beam and wood lagging wall to support the adjacent street and sidewalk. The excavation also exposed the foundation wall of the existing building. Design plans for the addition and the remodeled building included lower level parking with a connecting garage door cut through the existing concrete foundation wall. Additional foundation support was needed on each side of the proposed door opening due to the anticipated concentrated loads. Other foundation support elements were proposed along the existing foundation wall where the proposed construction activities could potentially undermine the existing footings.



Exposed foundation wall of existing building

SOLUTION ▼

Retrofit helical piers were selected to support the concentrated loads at each end of the garage door opening and to support additional sections of the existing wall should undermining of the footings occur. Eight (8) Model 350 (3.5-inch OD by 0.340-inch wall) hollow round shaft piers with an 8"-10" helix plate configuration were installed to support design working loads up to 40 kips. The helical piers were advanced to depths of about 25 feet below bottom of footing elevation to bear on competent bedrock. The tops of the helical piers were cut to design elevation before retrofit brackets were positioned over the piers and against and below the footing. Hydraulic cylinders were used to apply seating loads to each of the piers.



Positioning equipment for helical pier installation

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► *Continued*



Advancing helical pier lead section



Retrofit bracket installed



Bolting blank extension section

PROJECT SUMMARY ▼

Engineer/Architect:	DCL Consultants, LLC
Geotechnical Engineer:	Terracon, Inc.
Construction Manager:	McComas-Lacina Construction
Pier Installer:	MidAmerica Basement Systems
Products Installed:	(8) Supportworks® HP350 Helical Piers with an 8"-10" Lead Section; Installed Depths of about 25 feet; Design Working Compression Loads up to 40 kips

For additional case study and technical information please visit [Commercial.Supportworks.com](https://www.Commercial.Supportworks.com).