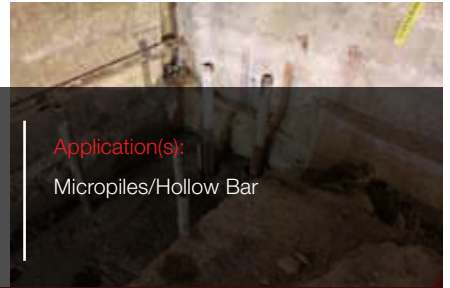
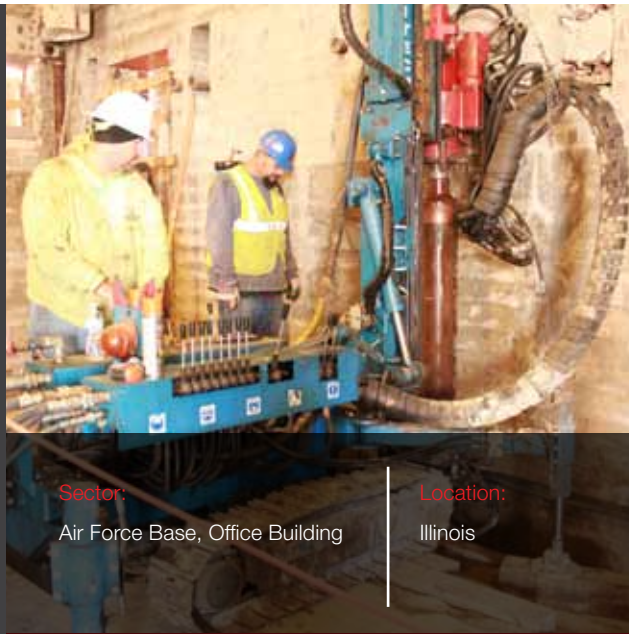




CIVIL CONSTRUCTION DIVISION



**Sector:**  
Air Force Base, Office Building

**Location:**  
Illinois

**Application(s):**  
Micropiles/Hollow Bar

## PROJECT CASE STUDY MICROPILES (HOLLOW BAR)



EARTH SHORING



GROUND IMPROVEMENT



DEEP FOUNDATIONS



VIBRATORY STONE COLUMNS



MICROPILES



GROUTING

### Description

The project consisted of upgrading the existing building at an Air Force Base. The upgraded building will be an advanced communication center that will include “black box” encrypted services and other “best of the best” communication technologies. The 1938 building had to be upgraded to newer, post 911, stringent building designs. Micropiles were chosen as the best solution to address new loading requirements and existing building construction challenges.

### Requirements & Challenges

This work consisted of Micropiles being installed in a very limited access location, overhead clearance was approximately 9 feet.

Drilling spoils and drilling solutions would need to be brought out of the building for disposal.

This project was bid as a design build project. Loads were given per shear wall, it was up to the micropile installer to come up with the number and depths of piles to meet the required compression, tension and lateral loads on each shear wall.

The engineer of Record requested that the micropile installer design the pier caps along with the micropiles.

### Solution

Helitech was selected as the micropile installer based on their expertise and experience in installing micropiles.

Helitech used their limited access rig to install approximately 20 foot of casing and ran hollow bar micropiles to depths up to 65 feet to achieve loads up to 252 kips in compression, 214 kips in tension, and 15 kips of shear.

Helitech designed and built the micropiles and pier caps for the various shear walls.

Helitech installed 232 total piles.

### Results

The micropile design was confirmed with the passing of three compression load tests.

Installation of the micropiles were completed on time and on budget.

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