

»» SITE PREPARATION

NEW CONSTRUCTION

REMEDIAL REPAIR

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ATLAS RESISTANCE® PIERS

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»» EARTH RETENTION

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CHANCE® CERTIFIED  
INSTALLER

**EAST COAST HELICAL PIERS**

Babylon, NY

GENERAL CONTRACTOR

**IRIDIUM DEVELOPMENT, INC.**

New York, NY

Hubbell Power Systems, Inc. is the world's leading helical pile/anchor manufacturer. The CHANCE® brand offers a technically advanced, cost effective solution for the Civil Construction and Electric Utility and Telecommunications markets.

# Four Story Manhattan Excavation



**PROJECT:**

Excavate the basement of a four-story building in Greenwich Village, Manhattan.

**BACKGROUND:**

An 18' basement was planned to be constructed under a brownstone residence in lower Manhattan. The project was stalemated when the contractor had difficulty locating a piling solution that could support the additional structural load at the limited access site.

**PROBLEM:**

A common deep foundation product used in New York City (NYC) is a driven pile, which requires large equipment and produces a considerable amount of vibration. However, the site had limited access with only a 50" x 50" opening and a façade of the building that could not be removed. In addition, the common walls at the site, required no-vibration, further preventing the use driven piles as they would have created unnecessary seismographic activity, disturbing the neighboring building.

**SOLUTION:**

Reengineered to utilize CHANCE® helical piles, the crew was able to excavate a basement in Manhattan, working seamlessly between the two buildings, without the need of additional earth retention to hold back the earth.

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# CASE HISTORY

Dense clay was found at the site, so the installer had to pre-drill each of the pile locations. At 26,000 ft-lbs of torque, the sufficient depth was achieved. Normally, this amount of force wouldn't be an issue in the field with the proper machinery and hydraulic pressure, but they didn't have that luxury. All the equipment had to fit through the 50" x 50" opening, brought into the backyard and then into the basement and re-mantled. Therefore, there was no feasible way to bring any machinery into the site.

The project was stalled for nearly a year before the CHANCE Certified Installer, East Coast Helical Piers, received the call. However, East Coast Helical Piers was able to complete the job in only 30 days using helical piles.

To install the CHANCE helical piles, a gantry capable of mounting a 40k drive unit with a custom-fabricated torque bar was erected in the backyard. A large Caterpillar skid steer was parked outside of the building, connected to the drive head by 200' of hydraulic lines. 10" Type Round Shaft (RS) pipe piles (5) with a 1/2" thick wall and a single 14" helix were installed 25' below grade. The helical piles were installed in eight days with a crew of five.

After digging out the basement to 18', the piles were installed to 25' to allow proper excavation. The primary purpose of the helical piles was to support the load of the structure during excavation. To remove the risk of collapse, T-brackets were welded to each pile and timber lagging was installed to continue a safe excavation.

"The moral of the story is being able to do this type of project remotely," shared Vinnie Grottola with East Coast Helical Piers. "I had a guy in the street in one machine, one in the middle and I ran the controls. With that type of torque, it's got to be done properly."

## KEY BENEFITS:

- Install time is faster than concrete
- Standard installation equipment
- Labor savings with smaller crews
- Installs even in inclement weather
- Immediate proof testing and loading

