Stabilization on Two Fronts

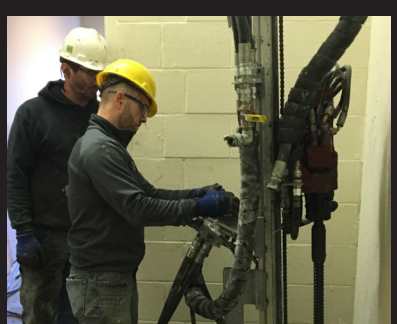
INNOVATIVE™ PIERING

Lateral support of the exterior foundation walls required 2 methods of anchoring: 1) Helical Tiebacks & 2) Grouted Rock Anchors. Both methods were performed simultaneously by Innovative Piering to 'fast-track' the project and minimize the total project duration.

Project: #11034
Structural Engineer: BFMJ, Inc. of Lexington, KY
Location: Georgetown, IN

The Dudee Medical Facility in Georgetown, Kentucky had come a long way over the past few months. When the owners purchased the property from the bank, it was known that it had some existing potential structural deficiencies. The front 12' tall concrete wall was lacking the engineering values need to resist the lateral earthen loads placed against it. Additionally, the side walls were originally designed to be laterally reinforced by the 3-story masonry stair stacks. Unfortunately, the stair stacks lacked enough weight to resist the lateral earthen loads placed against the foundation wall as well.

The solution included installing (16) helical tiebacks at approximately 6' on-center along the front foundation wall, and installing (8) grouted rock anchors inside the existing stair stacks.



Helical Tiebacks –Innovative Piering began this project by core-drilling (16) 4" holes through the existing foundation. Next, the exterior was excavated as required to be able to install the 5' helical anchor shafts. Each tieback was designed to be loaded to 10kip Ultimate. This required installing MacLean/Dixie HFS 1.5" galvanized, round-corner, square shaft helical tiebacks to a 15' depth and achieving a minimum torque of 1,200 ft/lbs each. Next, each anchor was fitted with tieback adaptors and 1" threaded bar. The interior of the building was then fabricated with a 10" galvanized, metal channel. Each tieback stuck through the metal channel and beveled washers and nuts were installed. Finally, each tieback was grouted, water proofed and backfilled.

Rock Anchors – Each 3-story stair stack required (4) rock anchors providing 61kip in tension. Innovative Piering utilized a Man-Portable, TEI Rock Drill to be able to access the tight, interior stairways. The rock anchor design included installing 90mm rock anchors to a depth of approximately 20'. T40 hollow bar was installed and capped off with ½" plate steel and nuts. Total anchoring provided >240,000# of tension load to each stair stack. Rock was immediately encountered within the top 3-5' of drilling. The limestone was found to be very competent, with no fractures or fissures. Drilling, while painstakingly slow going, was successful.

Total job duration was 5 full working days, and the customer was very impressed with the integrity and professionalism of Innovative Piering. After the stabilization was completed, the owner continued the remodeling required to get the building ready for tenants.