

Iron Pier Apartments

Syracuse, New York

Multi-story construction on poor soils where a compressible stratum is present in the upper subsurface profile typically requires a deep foundation solution. Such was the case for the Iron Pier Apartments during the development of the Syracuse Inner Harbor.



The project

In the first phase of the development, the owner planned to construct two mixed-use buildings up to three stories high, connected by a central courtyard. The total construction footprint covered approximately 48,000 sq. ft.

The challenge

The subsurface profile consisted of lake-deposited silt and clay, with a 20-25 ft thick stratum of organic soft sediments a few feet below ground surface and a high groundwater table. Given the highly compressible nature of the saturated organic soils, the potential for post-construction settlement needed to be addressed.

The solution

Keller was awarded the contract to provide a design/build heavy foundation solution that would limit the anticipated settlement to less than the specified 1.5 in total and 0.5 in. differential. Keller's solution consisted of 603 CFA (auger cast) piles installed in groups below pile cap locations and individually across the two building slabs to a depth of about 75 ft below working grade. The 14-inch diameter piles were designed as friction elements to provide an allowable capacity of 40 tons in compression. Pre-production compression load tests were performed on sacrificial piles to verify design assumptions. Reinforcement was installed in the upper 25 ft of each pile and extended above the top of pile elevation to facilitate load transfer to the pile caps.

Project facts

Owner(s)

COR Development Company, LLC

Keller business unit(s)

Keller

Main contractor(s)

COR Development Company, LLC

Solutions

Deep foundations

Markets

Residential
Commercial

Techniques

CFA (auger cast) piles

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