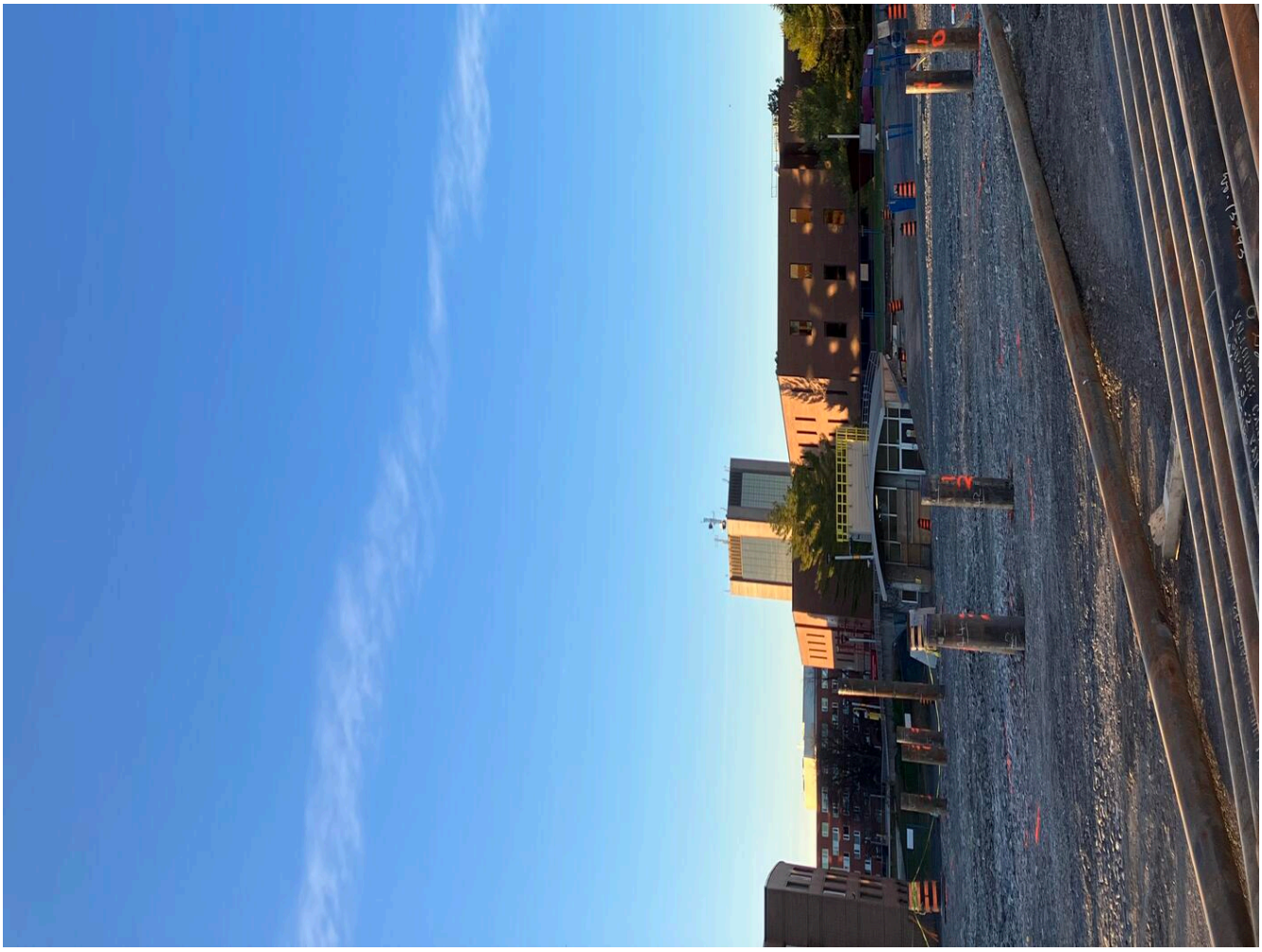
Carleton University Student Residences

Ottawa, Ontario, Canada

When ground conditions differed, Keller provided value engineering and offered a design build solution for new student housing.



The project

Carleton University added a 9-storey state-of-the-art residence building to accommodate 450 undergraduate students, to increase and modernize student housing. Ground conditions consisted of granular and silty clay from 10 ft to 25 ft overlying a layer of glacial till and highly weathered shale—unsuitable for the required loads.

Keller was awarded the contract through their value-engineered solution using aggregate piers. However, engineering consultants recommended a driven pile foundation due to additional seismic requirements. Micropiles were required at the base of the proposed staircase location to provide compressive and tensile resistance. Through further investigation, Keller noted differing subsurface conditions, including deeper bedrock than initially considered. To optimize the materials, Keller proposed alternative pipe pile sections, resulting in cost savings for the client. Keller installed 419 driven pipe piles keyed into bedrock, with an average depth of 50 ft.

Project facts

Owner(s)
Carleton University

Keller business unit(s)
Keller

Main contractor(s)
Sullivan

Engineer(s)
Keller

Solutions
Deep foundations

Markets
Institutional
Education

Techniques
Driven piles
Micropiles

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