Saskatoon Central Library

Saskatoon, Saskatchewan, Canada

Keller provides design-build excavation support and deep foundations for new library facility in downtown Saskatoon.

The project

To provide better resources for the surrounding community, the Saskatoon Central Library built a new facility in the downtown area. The ground conditions consisted of fill overlaying glacial till, with clay, sand, and gravel/boulders, and due to previous site usage, the area was classified as a brownfield with known soil contamination.

To support the 21 ft (6.5m) excavation for below-grade structures and ground support for soil remediation, Keller was contracted to design and install soldier piles and lagging.

While installing the soldier piles and lagging, Keller was awarded the deep foundations scope. Although considering CFA (auger cast) piles, Keller designed a drilled shaft solution due to the heavy loads, which ranged from 1,200 kN to 5,700 kN. Approximately 167 belled drilled shafts were installed to a depth of 31.2 ft (9.5 m).

During shaft installation, large boulders were encountered that required coring to reach the design depth. Working closely with the general contractor and other subcontractors on site, Keller adjusted the piling sequence to ensure critical path zones within the project could proceed according to the master schedule.

Project facts

Owner(s)
Saskatoon Public Library

Main contractor(s)
Ledcor Group

Engineer(s)
Keller

Solutions
Deep foundations
Support of excavation

Markets
Institutional

Techniques
Soldier piles and lagging
Drilled shafts

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