

Historic Public School

Brookline, Massachusetts

Keller provided a design-build underpinning solution and was able to quickly adapt the design and construction methods to address multiple changed conditions.



The project

To address increasing student enrollment, expansion and internal renovation of a historic public school, originally constructed in 1894 and once attended by John F. Kennedy, was needed. The scope of the project included demolition of existing additions and construction of a new integrated gymnasium and other facilities.

The challenge

During the planned demolition, it was discovered that the structure's bearing walls terminated just below grade rather than being supported on spread footings. The school's rear wall that would tie into the foundation support for the planned excavation required underpinning prior to commencement of the remaining excavation and construction.

The solution

Given the lack of spread footings, the underpinning pit geometry required modification to increase the anticipated cut height from 9 to 13 ft. This additional height required redesign and field adaptation of the original underpinning plan. Two levels of tiebacks were incorporated for additional lateral restraint. The remainder of the excavation support was designed as cantilevered drilled soldier piles and lagging to allow cuts of up to 20 ft, with more economical temporary soil nailing and shotcrete facing used where property line restrictions permitted.

Project facts

Owner(s)

City of Brookline, Massachusetts

Keller business unit(s)

Keller

Main contractor(s)

Shawmut Design and Construction
J. Derenzo Company

Engineer(s)

McPhail Associates, LLC

Solutions

Underpinning
Support of excavation

Markets

Institutional
Education

Techniques

Anchors
Pit underpinning
Soil nailing
Soldier piles and lagging

Email address

info@keller-na.com

Phone number

1 (800) 456-6548