

# Subsurface Constructors

Ground Improvement

## Castle Elementary School Addition



### **Ground improvement to overcome differential settlement and avoid over-excavating and replacing soil**

The soil profile of the site for the Castle Elementary School expansion consisted of lean clays and fat clays to a depth of 6 to 13 feet below existing grade, with dense lean clays beneath to boring termination depths. A combination of differential settlement between the existing building and the new addition plus the high cost of over-excavating and replacing up to 13 feet of soil led the design team to decide on [ground improvement](#) as the best solution for the site. Subsurface Constructors installed 103 [vibro stone columns](#) to provide a maximum bearing pressure of 4,000 pounds per square foot (psf) and to keep the settlement of the addition to less than one inch.

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## Project details:

**Geotechnical Engineer:** Terracon

**General Contractor:** Adolfson & Peterson Construction

**Services Provided:** Ground improvement, stone columns

**Year:** 2018

**Location:** St. Paul, Minnesota