



## Y.O.U. Non-For-Profit



### Ground Improvement – Installing Stone Columns

#### PROJECT OVERVIEW

A new headquarters for Y.O.U. being in Evanston, Illinois. This 2 story building will have interior column loads around 123 kips and maximum exterior column loads of 88 kips. Specific soils conditions encountered in the borings indicated miscellaneous clay and gravel fill material to 6 feet in depth with relatively high water content, clayey silt down to 10 in depth, the softer clay soil transitioned to a stiff to very stiff clay, deeper in the soil. It was estimated that settlement would be greater than the engineered requirements if the building was placed on native soils. To minimize the total and differential settlements, Vibratory Stone Columns were selected as most cost-effective and efficient method of improving the ground to support the new building.

#### REQUIREMENTS AND CHALLENGES

A maximum total settlement of 1 inch and a maximum differential settlement of ½ inch. An existing basement area at the site had been backfilled with an uncontrolled junk fill. This raised the risk of further settlement. The existing adjacent building was less than 6 feet away from the footprint of the new building. Vibratory Stone Columns would be installed right next to it.

#### SOLUTION AND RESULTS

Because of the challenging soil conditions, we were hired to design and build vibratory stone columns to improve the ground and limit the total and differential settlement. CNC Foundations predrilled through the uncontrolled junk fill in the existing basement area to make sure the settlement would be controlled. CNC Foundations also predrilled down to the bottom of the footing at the adjacent building. This allowed for us to install the vibratory stone columns right next to it without causing cracking or damage.

CNC Foundations' design and methods of construction allowed for a safe and effective solution for the owner. The testing at the site confirmed the soil parameters used in the design and the construction was completed without disturbing the existing adjacent building.

### Project Details

#### SECTOR

Non-For-Profit

#### LOCATION

Chicagoland / Evanston, Illinois

#### APPLICATION(S)

Aggregate Piers / Vibratory Stone Columns (VSCs) for Ground Improvement

