Buildings

Easterseals Athletic Center

UNITED STATES

Chicago, IL

Owner
Easterseals

Engineer
Testing Service Corp.

General contractor
Clune Contsruction

Dates of work
2017/11 2017/11

Main figures

Controlled Modulus Columns
150 EA.

Description

The nonprofit Easterseals serves the disabled of Chicago through its Adult Program, located in the Illinois Medical District. In 2017, the organization added a Therapeutic School and Center for Autism Research that spanned approximately 16,000 sq ft.

Due to the planned connection between the existing building and the addition, there were concerns that differential settlement between the structures would cause foundation performance issues. Menard's proposal to use Controlled Modulus Column (CMC)® rigid inclusions was selected based on cost savings and ease of foundation construction.

Ground conditions

Existing fill materials were encountered near the surface of all soil borings and extended to depths from 7 to 10 ft below the proposed finish floor elevation. The fill comprised a mixture of topsoil, clay, sand and variable amounts of debris.

Underlying the fill was a silty clay layer, consisting of a stiff upper crust with a thickness of about 8 ft. Below, overconsolidated clay was encountered. This served as the bearing layer for the CMC rigid inclusions.

Solution

CMC Rigid Inclusions were selected to support the building and limit settlement. Their ability to transmit loads below soft, compressible soil layers and into suitable strata at depth provide optimal results. Unlike deep foundations, which are connected to the foundation, CMC rigid inclusions allow for simple spread footings to be constructed above.

In addition, because their installation does not create significant vibrations, the Inclusions could be safely installed adjacent to the existing building.

Menard designed a layout of CMC Rigid Inclusions at each footing to support column loads up to 520 kips. CMC rigid inclusions were also designed underneath the perimeter strip footings to support the wall loads.