



Preferred Freezer Warehouse

Chicago, Illinois

Rigid inclusions installed by Keller successfully supported foundations and heavy slab loads to avoid the use of deep foundations, structural slabs, and removal of unsuitable materials.



The project

Preferred Freezer and Clarius Partners planned construction of a new 227,043 sq ft cold storage warehouse consisting primarily of large racking units for cold food storage and a truck docking bay. Subsurface conditions generally included 5 to 8 ft of miscellaneous urban fill over 20 to 30 ft of very soft clay underlain by stiff clay and bedrock.

The challenge

The proposed site fill and structural loading, including heavy slab loads, would have caused excessive consolidation settlement of the underlying soft clays. In addition, site exploration indicated contamination within the soils, so any foundation or ground improvement solution required minimal spoil generation and removal.

The solution

Keller designed and constructed a rigid inclusions program to support the structure and slab by transferring the loads to the stiff clay and bedrock below while allowing for traditional slab-on-grade and shallow foundation construction. The design included a regular pattern of rigid inclusions and a load transfer platform which was incorporated into the grade change. Keller used recycled onsite materials including crushed concrete, crushed asphalt, and treated clays.

Project facts

Owner(s)

Clarius Partners

Keller business unit(s)

Keller

Main contractor(s)

Keeley Construction, Inc.

Engineer(s)

Testing Service Corporation (TSC)

Solutions

Ground improvement

Markets

Commercial

Techniques

Rigid inclusions

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