Buildings

Gerber Manufacturing Plant

UNITED STATES

Fremont, MI

Owner
Nestle Nutrition

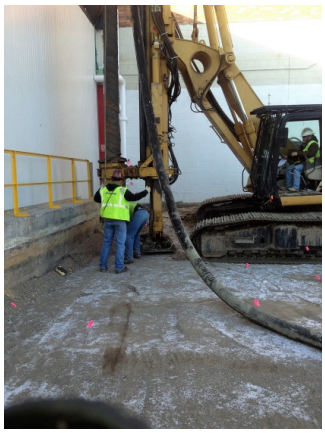
Engineer
JDH Structural Engineering and SME - Soil and Materials Engineers, Inc.

General contractor
Dan Vos Construction Company

Dates of work
2013/01 2013/02

Main figures

Controlled Modulus Columns(CMC)® rigid inclusions - 987 EA.



Description

As part of a $75 million, 10-year capital investment plan for its plant in Fremont, MI, Gerber proposed the Gerber Nestle Nutrition Facility as part of a new production line. Fremont is the birthplace of Gerber, which was founded by Dorothy Gerber in 1927 after she was inspired to use her family canning business to make baby food for her child.

The new project would involve the replacement of slabs in Buildings 20 and 22. These were single-story buildings that were previously supported on the soils at grade. Excessive settlement had occurred at the site - in some areas, the former slabs had settled as much as 2.5 ft.

Given the excessive settlement that had occurred, Menard Group USA was enlisted to provide ground improvement before the new production line could be built inside of the existing facility.

Ground conditions

The soil profile generally consisted of fill over peat, fine sand and organic silt over silty clay. Fill thickness generally ranged from 0 to 14 ft. The fill was a heterogenous and included sand, silt and gravel with varying amounts of brick and cinders. Fine sand was encountered beneath the fill materials in some of the borings. The fine sand ranged in thickness from approximately 2 to 8 ft and was encountered above the peat and above the organic silt.

Peat was encountered beneath the fill or fine sand. The thickness of the peat layer ranged in thickness from 1 to 9.5 ft. Below the fill and peat, organic silt, up to 20 ft thick, was encountered. Dense sand or stiff clay was encountered below the organic silt layer.

Solution

The ground improvement at the site involved removing the existing slab, installing CMCs to support the footings and the slabs, filling back to the bottom of the slab and placing a 12-inch-thick concrete slab. The new slab is a slab-on-grade with a load of 400 psf and a maximum footing load of 670 kips for a 12-ft-square footing (4,650 psf bearing pressure).

The footings, grade beams and floor slab were supported by 987 CMCs that reached a maximum depth of 36.1 ft. The CMCs increased bearing capacity under the existing structures.

Despite tight working conditions inside of the existing buildings, all work was completed in one continuous phase with all quality control testing meeting specified requirements.