



UNITED STATES

CMH Building B

New Albany, OH

**Owner**

Amazon Web Services

Engineer

Kimley Horn (Civil); HKS Inc. (Structural);
GCI (Geotechnical)

General contractor

Walbridge

Dates of work

November 2022 December 2022

Main figures

Stone columns

3,059 EA.



Description

To meet growing demand for web hosting and file storage, AWS is developing a campus of data centers near Columbus, OH.

This 214,790 sf, 1-story data center is to house computer equipment and its supporting infrastructure as well as a small office space. Additionally, 26 generators and associated transformers were to be placed to the south of the building footprint. Part of a bigger project worth an estimated \$250 million, the new fulfillment center would add upwards of 1,000 jobs.

Due to the compressible nature of the soils at the site, Menard USA was contracted to provide ground improvement – the selected technique was stone columns.



Ground conditions

Soils at the site contained glacial moraines, with surficial clays underlain by glacial till which generally increases in stiffness with depth. Near surface soils (upper 10-ft) tend to be lower strength with high moisture content.

Solution

For adjacent structures, undercuts of 10-ft or more were implemented to address soft and saturated soils. The soil required moisture treatment before replacement, which added significant time and cost to the project schedule. To minimize the costs and avoid such delays, Walbridge approached Menard to develop an alternative ground improvement solution – an excavate-and-replace method.

To address the soil at the immediate surface, Walbridge utilized lime kiln dust to moisture-treat fills that were needed to reach the finished floor elevation. Menard designed and installed stone columns to increase bearing capacity and provide settlement control for the building.

The stone columns were installed to depths of 13 ft to 14 ft beneath the building slabs, footings, and generator and equipment pads. The stone column solution was designed to support footings sized for 3,000 psf. The design also supported a slab live load of 440 psf. The design provided for 1-in of post-construction settlement with a differential settlement of less than a 1/2-in, meeting the performance criteria of the building.

Menard successfully installed 3,059 stone columns to support a new data center in New Albany, OH.