

## UNITED STATES

# AdventHealth Lego Building Orlando, FL



**Owner**  
AdventHealth

**Engineer**  
Terracon (Geotechnical); BBM Structural (Structural)

**General contractor**  
Batson-Cook Construction

**Dates of work**  
February 2021 February 2021

**Main figures**  
Controlled Modulus Columns  
516 EA.



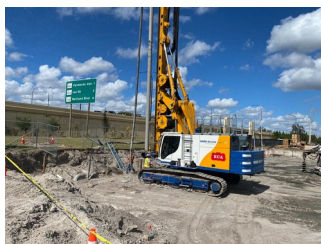
## Description

The proposed AdventHealth Lego Building is a 12-story, mixed medical use structure with a plan area of approximately 25,000 sq ft. The building is part of the continued development of the AdventHealth Health Village Campus in Orlando. Eventually, the 172-acre campus will contain medical treatment and research buildings, residences, dining, and retail stores. The Lego Building is positioned on a four-acre lot between E Winter Park St and E Rollins St, bordering the east side of Interstate I-4.

The new building is the future home of Rothman Orthopedic Institute, neurosurgery services, an ambulatory surgery center and more. The project underscores the growing need for healthcare in ever-expanding Orlando.

“Our long-term vision has always been for the Health Village campus to be a hub of innovation and excellence, and also a place where people can live, work, and play,” Rob Deininger, CEO of AdventHealth Orlando, said in a press release.

Due to the loose nature of the soils at the site, Menard USA was contracted to provide ground improvement – the selected technique was Controlled Modulus Columns (CMC)® rigid inclusions.



## Ground conditions

The soils at the site generally consisted of upper loose to medium dense Sand (SP) and silty Sand (SM) extending to depths of approximately 40 ft. Below the upper sands, an approximately 10- to 15-foot-thick layer of soft clay was encountered. Loose to dense sands with varying amounts of silt and/or clay were encountered below the clay layer..

## Solution

The project team considered both stone columns and CMCs for support of the Lego building. The stone columns were proposed to treat only the shallow loose sands, while Menard presented the CMC option to extend through the lower soft clay zone. CMCs were selected due to concerns of excessive settlement of the lower clay layer if left untreated.

Menard installed 516 CMCs, totaling 33,900 LF, to an average depth of 66 ft and a maximum depth of 88 ft. Menard designed a layout of CMCs at each footing to provide a bearing capacity of 8 ksf and support column loads ranging from 1,250 to 3,900 kips. CMCs also supported two mat foundations with cumulative loads on the order of 9,000 kips each, and two crane pads. The design provided for 1-1/4 in of total post-construction settlement with a differential settlement of less than a 1/2 in, meeting the performance criteria of the building.

To support a mixed medical use 12-story building in Orlando, Menard successfully installed 516 CMCs.