

BRAYMAN CONSTRUCTION Tackles Low-Headroom Drilling Challenges for WVU Healthcare

By Bernard F. Murphy, Project Manager

Background

Brayman Construction Corporation took on low-headroom drilling for the West Virginia University Ruby Memorial Hospital Atrium Infill Project. Ruby Memorial is the largest facility in the WVU Healthcare family. To meet the growing demand for services, WVU instigated the building of a new hospital tower and other new facilities including the new atrium.

The Atrium Infill will be a new drop-off canopy to the main entrance of the Ruby Memorial Hospital. The new four-story atrium lobby will have one public entrance and a separate employee entrance. It will also include eight



Patients, visitors and employees coming and going with work occurring behind the curtained area.

new visitor elevators, a coffee shop, and gift shop.

Brayman Construction Corporation was contracted by general contractor, W.G. Yates and Sons Construction

The project included furnishing the following: the drilled pier layout, installation of rebar, and the placing of concrete and spoils control, with all of the work being conducted in a low-headroom work area.

Company to drill 81 drilled piers in low-headroom conditions for Ruby Memorial. The project included furnishing the following: the drilled pier layout, installation of rebar, and the placing of concrete and spoils control, with all of the work being conducted in a low-headroom work area. Brayman also relocated and added drilled piers and grade beams to address drilling obstructions, including multiple utility and existing footing foundations.

Special Problems Encountered & Solutions

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Multiple utility and existing footing foundations were encountered during drilling making it necessary for Brayman to relocate them.

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Brayman operator drills at a depth of 25 ft using a CZM EK125 Drill Rig with 42 inch diameter shaft.



Construction Conditions

The construction dirt and dust made a protective curtain on the front of Ruby Memorial Hospital necessary. All construction was done behind a huge plastic curtain. Scott Bierer, Alan Neptune and Jeff Heiskell, from the WVU Healthcare Facilities Department, stated “When it came to the expansion efforts, the atrium infill project was one of the most challenging. Thousands of patients, visitors and employees passed through the

Brayman operator drills under 23 inch of headroom clearance into 17 ft rock socket, using 48 inch diameter shaft at 40 ft depth.

viding the construction manager resolutions to the conflicts in relocating and adding drilled piers and grade beams.

The project called for a low-headroom rig and Brayman turned to CZM Foundation Equipment* choosing the EK125 for the project. Just days prior to mobilization, Brayman and CZM technicians worked diligently to retrofit the CZM EK125 drill rig with a new low-headroom mast kit. It was the first time Brayman would use the low-headroom kit and it proved to be

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the right configuration for the job. The demanding project schedule required Brayman to provide two drill rigs with low-headroom capabilities. However, through the efficient efforts of the Brayman team and drill crew, they were able to meet the schedule utilizing only one drill rig.

The building shafts ranged from 30 to 48 inch in diameter with depths of up to 45 ft. The hard shale and limestone bedrock drilling was the easy part of the project. The challenging part of this project was not necessarily the scope of work or the hard shale and sandstone bedrock drilling, it was working in the low headroom drilling restrictions. Having less than 23 inch clearance to drill the shafts and maneuver the equipment proved to be a challenge. It was a challenge welcomed and easily handled by the Brayman crew. Having the CZM EK125 with the low-headroom mast kit made the challenge easier.



CZM EK125 Drill Rig with boom down and in route to next drilling location.



Thousands of automobiles adjacent to the job site made for careful planning when materials and equipment entered the work area.

atrium infill construction zone, through a temporary entrance, on a daily basis.”

Brayman conducted drilling under the active floors of the hospital and during the University’s collegiate football season, which shared parking facilities with the job site. The low-head-room, limited access area behind the protective curtain along with the concern for the daily traffic of people and automobiles coming and going made the project challenging. However, it was a challenge that Brayman handled with ease.

**Indicates ADSC Member*

Project Team

Project Name:	WVU Ruby Memorial Hospital Atrium Infill Project
Project Owner:	West Virginia University Hospitals, INC.
General Contractor:	W.G. Yates & Sons Construction Company
Soil Engineer:	Triad Engineering Consultants
Structural Engineer:	Atlantic Engineering
Foundation Contractor:	Brayman Construction Corporation*

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More information and applications will be available soon, at www.adsc-iafd.com.