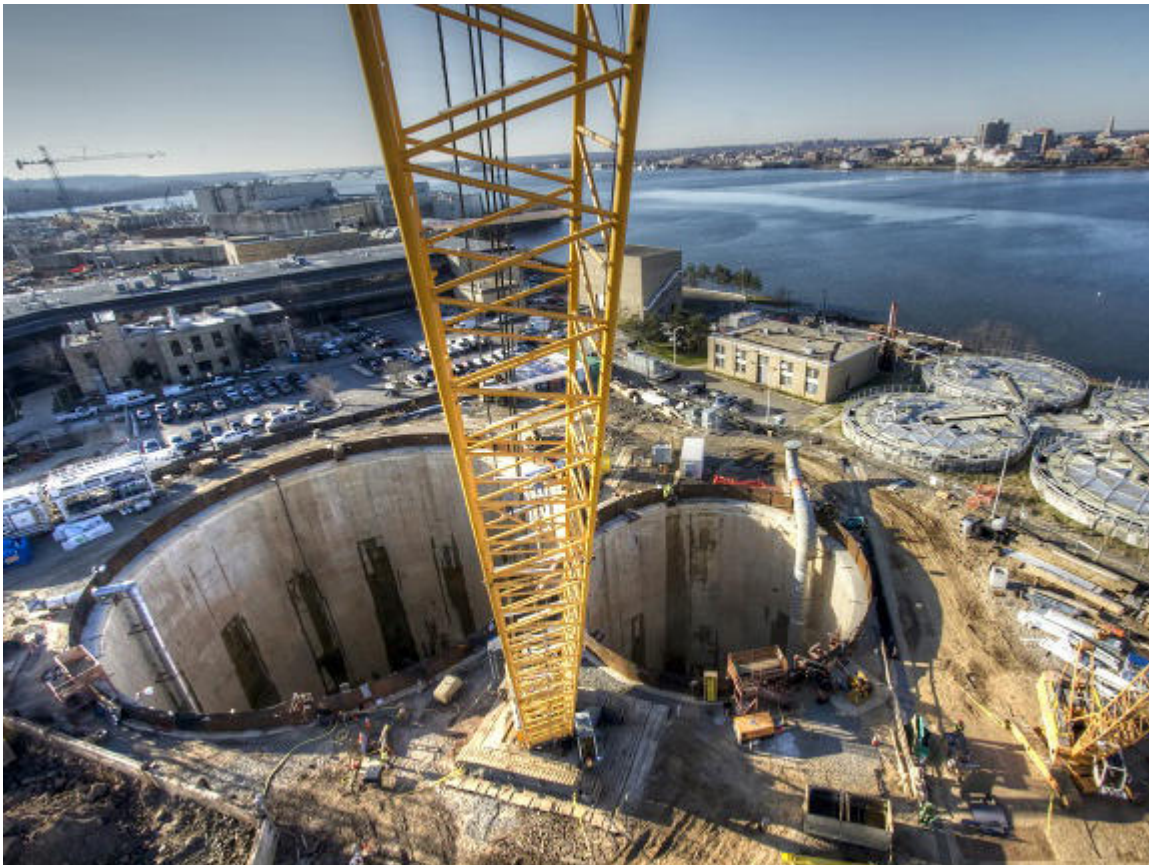


DC Clean Rivers Project

Washington DC, United States

Diaphragm wall shafts for tunnel and sewer network



The project

The DC Clean Rivers Project Division A - Blue Plains Tunnel is one of several contracts that comprise the overall Long Term Control Plan (LTCP) of DC Water. It consists of a network of new tunnels, sewers, and diversion structures designed to capture overflows to Rock Creek, and the Anacostia and Potomac rivers for treatment at the Blue Plains Advanced Waste Water Treatment Plant.

The challenge

DC Water is in the process of implementing its LTCP to meet requirements established by the US Environmental Protection Agency for pollution control and reduction of combined sewer overflows into nearby waterways.

The solution

Bencor was contracted to design and install four reinforced concrete slurry diaphragm wall shafts along the tunnel alignment.

The slurry walls provided initial support during shaft excavation and also formed part of the permanent structure. Two of the shafts were combined in a unique figure-of-eight configuration, consisting of a 81-ft diameter screening shaft and a 139-ft diameter dewatering shaft approximately 170 to 195ft-deep. These two shafts also served as the main access point for the tunnel construction. Soil conditions included fill, alluvium, and very stiff to hard silt and clays. Total wall area was 258,000 SF, with varying thickness of 42 and 60 inches.

The project was named ENR Magazine's Project of the Year 2016.

Project facts

Owner(s)

DC Water and Sewer Authority

Keller business unit(s)

Keller North America

Main contractor(s)

Traylor-Skanska-Jay Dee joint venture

Solutions

Excavation support

Markets

Infrastructure

Techniques

Diaphragm walls / barrettes – grab