

Columbus Park & Ward Street MWRA Headworks

Location: Boston, MA | Services Rendered: 3D Laser Scanning & BIM Modeling



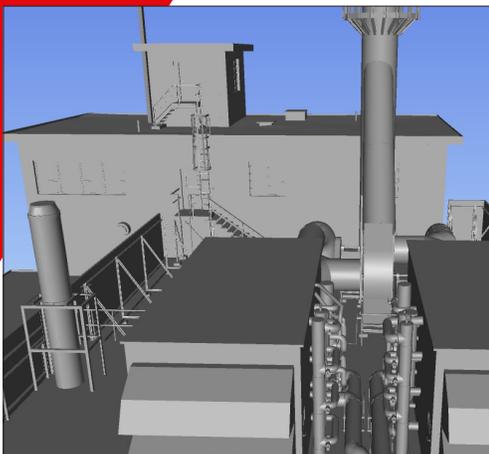
CREATE

The upgrade of the Columbus Park & Ward Street Headworks facilities is one of the largest and most complex wastewater projects the Massachusetts Water Resource Authority will undertake in the near future. The two facilities treat peak wastewater flows of 182 MGD and 256 MGD, respectively. A \$28.9 million contract was awarded to the CDM Smith team, which included AECOM, Green International, LandTech Consultants and others, for a complete refurbishment design of the facilities. The selection committee unanimously chose the team due to its unique ability to utilize innovative 3D technologies considered instrumental in enhancing design and reducing change orders.



INNOVATE

LandTech completed a laser scan of both facilities to document existing conditions. The multi-story, heavy M/E/P-laden facilities also included subterranean levels and numerous wet channel areas that required inverted scanning to document. By utilizing a specially constructed platform and inverting the scanners at key locations, full documentation of the wet trains was accomplished without the need for confined space entry, resulting in significant cost savings.



INTEGRATE

The point clouds were processed into a single file for each facility and developed into an extremely accurate BIM model. This model forms the basis for the refurbishment design and is the first step in reducing potential conflicts during the construction phase. LandTech will further support this 9-year project by conducting a full as-built laser scan of each facility and modifying design models to accurately reflect the facilities upon completion of construction. The resulting models can be utilized for further improvements and converted into digital twins for integration with multiple systems to assist in asset management, facility management, operations, training, and security.