



*Left: Installing sheet piling excavation support.  
Above: Excavating previous structures.*

## OCME Forensic Biology DNA Laboratory at Bellevue Hospital

*New York, NY*

Mueser Rutledge Consulting Engineers (MRCE) is the Geotechnical Engineer for the new 355,500-sf, 263-foot-high, 15-story steel framed structure for the office of the Chief Medical Examiner at the DNA Forensic Lab at Bellevue Hospital campus site at 26th Street and First Avenue in New York, NY. The building will also house an Emergency Medical Services (EMS) garage. The building site is underlain by fill at the river's edge with the bedrock surface sloping downward dramatically toward the east.

On the west side of the site near First Avenue, the rock is shallow. There the building mat will be supported on rock. On the east side, the rock drops off rapidly toward the East River to depths exceeding 125 feet below the ground surface. A majority of the concrete mat that will support the building will be supported on a natural sand stratum that overlays glacial lake deposits and glacial till. It is estimated that the east side of the building will settle 1.5 inches, mostly during construction due to the presence of deep soil deposits. At the west side of the building, where the mat will bear on rock, there will be virtually no settlement.

Control of the ground water was a challenging aspect of the project. The concrete mat foundation will be 28 feet below the ground water surface and was necessary to dewater the sand layer that supports the mat, and the underlying glacial till stratum. The ultimate excavation is 36 feet below street level and the water table is 8 feet below grade. So, excavation took place 28 feet below the water table. To accomplish this, the contractor designed a dewatering system consisting of deep wells, shallow wells, and a sheeting system extending to rock or clay layers below subgrade in order to minimize the amount of water penetrating the excavation.

MRCE's services included: design of a subsurface investigation; boring inspection; design recommendations for the mat foundation; specifications for support of excavation; contract drawings and specifications for a slurry wall alternate; and construction observation, including pile driving inspection.