

## NEW YORK LAW SCHOOL

New York City, NY



**T**he New York Law School, located in the heart of New York City's Tribeca district, is one of the country's most prestigious law schools. In 2006, the school announced its plans for a massive expansion and renovation project, which would nearly double its size.

The first phase of the project included the construction of a new, nine-story, glass-encased, 200,000-square-foot building. The design for the new structure included five, above-ground levels and four levels below the ground. The new building would be integrated into the Law School's existing three

buildings, which would all be renovated in the second phase of the project.

### PROJECT BACKGROUND

As with most areas in and around New York City, Tribeca is heavily developed and offers limited available space for new construction. The construction site for the Law School's new building was surrounded by structures built in the 1850s and 1860s. Encroachment on the surrounding buildings' property for any of the new construction was strictly prohibited, which made for an extremely tight construction site. In addition, the site's proximity to an

**Owner:**

New York Law School

**General Contractor:**

Pavarini McGovern

**Technique(s):**

Barrettes, Diaphragm Wall

**Subsurface Conditions:**

Manhattan Schist

**Approximate Key Quantities:**

Barrettes	44
Diaphragm Wall	65,000 square feet



*Diaphragm wall excavation (left); Interior steel column with barrette foundation (right)*



active subway line further emphasized the need to minimize movement and vibration throughout the construction process.

The project's general contractor, Pavarini McGovern, decided to use a top-down construction approach for the four underground levels of the new building.

Top-down construction approaches are used for deep excavation projects where tieback installation is not feasible and where soil movements must be minimized.

This approach starts with the installation of a diaphragm wall, followed by the construction of the basement floors, which can be built systematically as part of the excavation process.

## THE WORK

The project required the construction of a diaphragm wall around the perimeter of the

structure's foundation, which would create a concrete bathtub foundation for the building. The bathtub would eliminate the possibility of water entering the basement due to the site's close proximity to the existing water table, which was 15 feet below grade. Once the diaphragm wall was in place, the subterranean, basement floors could continue to be constructed throughout the excavation process.

Nicholson was contracted to create the new structure's perimeter wall, which was a combination of diaphragm wall and grouted toe where the wall interfaced with the underlying rock. The perimeter wall would be used to support the site's excavation and to create the structure's bathtub foundation.

Using a hydraulic grab, Nicholson constructed a 65,000-square-foot diaphragm wall that reached depths of 100 feet.

In addition, Nicholson installed the load-bearing elements for the new structure, which

included the 44 barrettes that the building's columns would rest upon. The load-bearing elements were founded two feet into the Manhattan Schist formation.

## THE RESULT

With the addition of the new building, the New York Law School expanded its total size from approximately 205,000-square-feet of existing space to a 346,000-square-foot, state-of-the-art educational environment.

The four underground floors of the new structure make up the school's new library, which holds 29,000 linear feet of book shelves, a rare book room, and a 300-seat auditorium.

The bathtub-style foundation used on the New York Law School's new building has only been used one other time in the history of New York City's construction projects. The other bathtub foundation was constructed by Nicholson as part of the restoration of the World Trade Center site.