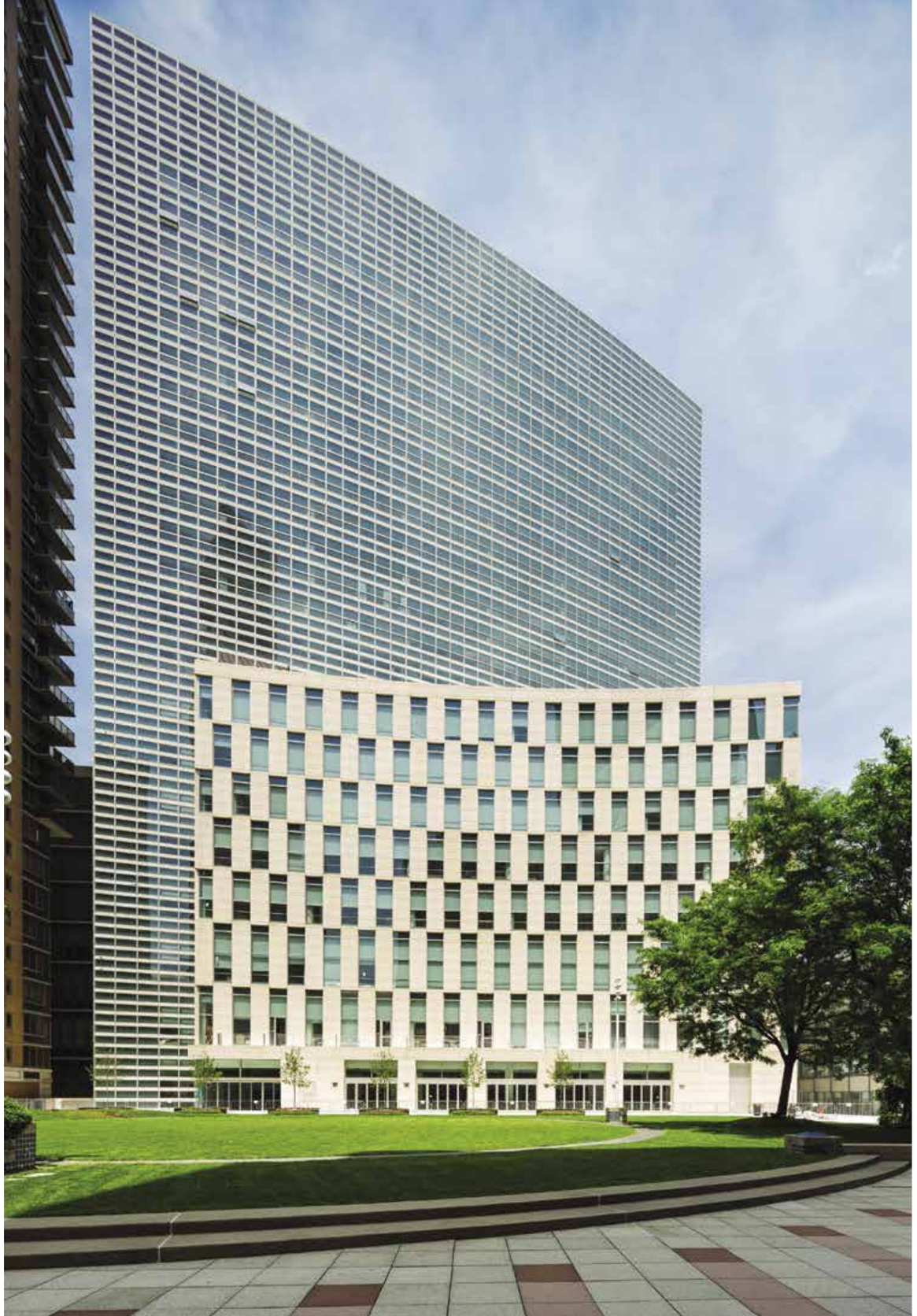
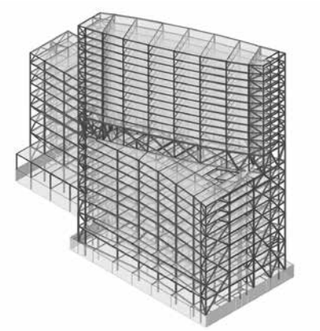




Fordham University Law School and Residence Hall

The new face of the school's Lincoln Center campus uses two curved structural steel trusses to accommodate a tight budget and the need for column-free spaces within the new mixed-use building.

IN 1954, FORDHAM UNIVERSITY PRESIDENT Father Laurence J. McGinley asked New York City master planner Robert Moses if Fordham—founded in 1841—could create a satellite of its Bronx campus by renting space in a new office building at Columbus Circle. Moses turned him down, but what he offered instead nearly made the cleric fall off his chair. According to Fordham history, Moses proposed the school use almost 10 acres of what would become Lincoln Center for the Performing Arts' 16.3-acre campus. So, before there was an Alice Tully Hall, Avery Fisher Hall, Metropolitan Opera House, or even an iconic fountain at Lincoln Center, Fordham's law school building opened there in 1962.

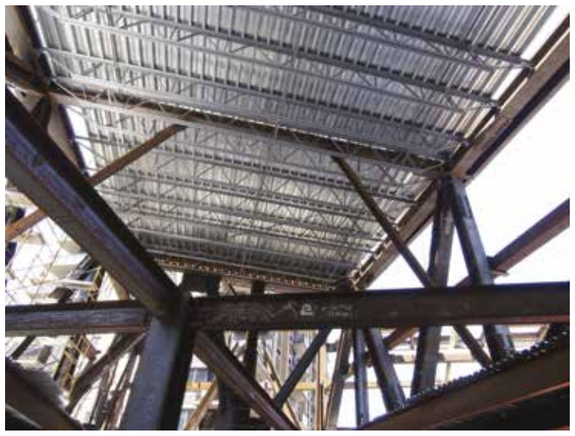
Today, Fordham's Manhattan campus has expanded to become home to portions of its undergraduate college and its graduate schools of arts and sciences, business, education, and social service. In 2014, as part of the first phase of a 15-year master plan for the Lincoln Center campus, Fordham opened the doors of a new law school and residence hall by Pei Cobb Freed & Partners, led by partners Henry Cobb and Yvonne Szeto. The nine-story law school (with a tenth floor below grade), roughly L-shaped in plan, has gently curving facades clad in a checkerboard pattern of glazing and precast concrete panels. The, 478,305-square-foot lower building more than doubles school's event and office space, while the residence hall on levels eleven through twenty-two provides much needed housing for 130 undergraduates.

The law school also creates a new northern enclosure for Fordham's Robert Moses Plaza, a lush green square, protecting it from busy West 62nd Street. Szeto and Cobb stepped the building's northern elevation back at the second floor, creating an outdoor terrace that looks across 62nd Street to Lincoln Center's plaza. Combined with this *piano nobile*, as Szeto calls it, the law school's concave curves are an inviting gesture to its grand cultural neighbor across the street, its buff-colored panels visually connecting to Lincoln Center's swaths of travertine. "From the first visit Yvonne and I made here, we were aware that this was a very privileged site," says Henry Cobb, founding partner. "We are creating, with this building, a new face for the Lincoln Center campus."

The most unusual part of Fordham's brief for the building was the inclusion of an undergraduate residence hall with the law school. Using a type of framing system developed in 1966 by prominent American structural engineer William LeMessurier, the architects deftly added a 12-story tower on top of the school in order to accommodate the dorm.

In plan, the glass and steel tower diagonally bisects the easternmost volume of the law school, with its convex curves complementing the school's concave ones. "We decided not to just place the [dormitory] east-west, so it would separate 62nd Street and the plaza, but instead to angle it so it opens out more gently to the north and south," says Szeto, gesturing to Columbus Avenue.

Such a complex mix of programs and spaces—many of them column-free, such as the law school's library, a large multi-purpose room on the second floor, and classrooms on the third and fourth—required extensive coordination with the project's structural engineers, WSP Cantor Seinuk (WSPCS).



This page, clockwise from top left Staggered truss construction. An exterior view of the mega truss. Beam openings for telecom and HVAC requirements. The school under construction in 2012. Mega truss load transfer from tower to podium. The dormitory's staggered truss.

Facing page The law school's triple-height lobby (top) and column-free moot courtroom (bottom).

This page: Christina Nambiar/Pei Cobb Freid & Partners; opening page photo: © Paul Warchol

This page and following spread: © Paul Warchol

Programmatically, Szeto and Cobb placed the law school's most public programs, such as mock courtrooms, event spaces, and the dining room, on the first two floors. Floors three and four contain instructional spaces; five and six hold the 90,000-volume law library; seven and eight are for faculty and administration offices; and the ninth floor provides an elegant and private space for the work of the law clinic, a law firm within the school that has 14 practice areas and takes court-appointed cases. "Within every package of two floors, we have multi-story atriums where we connect the students," says Szeto; providing a sense of community in the "vertical campus" was another of the firm's missions.

Whereas conventional steel framing with composite concrete on metal deck flooring was selected for law school floors, LeMessurier's staggered truss system was chosen for the framing of the dormitory floors. It consists of a staggered truss steel framing system spaced up to 30 feet, with 30-foot-long, 8-inch-thick precast, pre-stressed concrete planks spanning between the trusses, with floors alternately supported on the top and bottom chords. The top and bottom chords and perimeter columns are W sections, and the interior vertical and diagonal members of the truss are HSS (square/rectangular sections). "This system results in a considerable saving in both building height and cost," explains Rodica Kestenband, Vice President and WSPCS Project Manager. The trusses are in line with the partition walls, so that the steel is concealed by a soffit on top of the wall. The diagonal members are eliminated at corridors, replaced by a Vierendeel truss system to allow for corridor openings to go through the truss.

To maximize the open spaces at the law school below, WSPCS developed two curved trusses, matching the profile of the dormitory tower and extending its entire length within the mechanical floor and supported on six mega-columns. Column free spaces were also created by hanging large floor areas from Vierendeel trusses between the top levels of the law school.

The building's design and program require the transfer of upper level columns supporting the staggered truss system once they reach the 10th floor (the first floor of the dormitory). Story-deep trusses between the 10th and 11th floors, and located within the exterior wall of the residential tower, allow this transfer to happen. This economical truss system can be used because the 10th floor is dedicated to mechanical equipment (as is the 23rd).

The lateral-load resisting system consists of a combination of resistance provided by the stiffness of the story-deep staggered truss system and braced frames inside the elevator walls in the residential tower. The lower level framing utilizes a combination of braced frames in the elevator cores, combined with moment frames strategically located within the column lines. The frames, column, and diagonal members are typically A992 Grade 50 W14 sections; however some members require built-up plate sections or W14 sections with ASTM A572 Grade 50 plates.

This unusual combination of a law school and an undergraduate dormitory—not to mention Fordham's home within the context of Lincoln Center—reflects the current and future face of cities, says Cobb. "The future of cities is going to involve more and more mixed use," he says. "Even though these are both Fordham buildings, they serve totally different constituencies. Most people don't notice the dorm when they are close up to the law school, yet it's a very important gesture. I think in a strange way the dormitory adds something to law school." □

Top The law school's double-height library.
Above A curving steel staircase connects the third and fourth-floor student lounges and is a focal point in the tall interior space. Curved HSS stringers provide an efficient continuous path for load transfer and are connected by radial HSS cords that support metal pans seats for precast terrazzo treads and risers. The guardrail is made of curved glass panels slipped into a steel shoe at the base that is anchored to the top of the HSS stringer.

FORDHAM UNIVERSITY LAW SCHOOL AND RESIDENCE HALL

Location: **150 West 62nd Street, New York, NY**
Owner: **Fordham University, New York, NY**
Architect: **Pei Cobb Freed & Partners**, *New York, NY*
Structural Engineer: **WSP Cantor Seinuk**, *New York, NY*
Mechanical Engineer: **Cosentini Associates**, *New York, NY*
Structural Steel Erector: **Falcon Steel Co., Inc.**, *Wilmington, DE*
Miscellaneous Iron Fabricator and Erector: **Ment Brothers Iron Works Co.**, *New York, NY*
Architectural Metal Fabricator and Erector: **Benson Industries**, *New York, NY*
Ornamental Metal Fabricator and Erector: **Airflex Industrial Inc.**, *Farmingdale, NY*
Curtain Wall Fabricator and Erector: **Benson Industries**, *New York, NY*