 Located at the busy corner of 5th Avenue and 14th Street in Manhattan, the New School University Center is a stacked structure combining academic and student apartments. The 18-story complex with two below-grade levels, providing space for all aspects of campus life, houses 10,000 sf of retail space on the first floor, 230,000 sf of academic space on the first seven floors, and 135,000 sf of 600-bed student apartments on the remaining nine floors. The academic space includes 50,000 sf of design studios, interdisciplinary classrooms, and laboratories that are easily adaptable to encourage a mix of different disciplines. It includes a 700-seat auditorium, featuring a reconfigurable stage (with 18 electric lifts) that can be set up for dance and musical performances or as a fashion runway; a large cafeteria; a two-story library; a 2,200 sf faculty resource center; three student lounges; and a lobby and café on two levels, suitable for performances. The building includes numerous spaces for informal interaction such as the three central staircases that weave their way through the building.

Several unique architectural features called for creative structural solutions. A series of stacked, undulating, reinforced concrete exit and access stairways are bracketed from a sloping perimeter concrete column structure using a complex network of steel trusses and Vierendeel panels. Thickened slabs support planted green roofs at both the 7th and 8th fl set-backs. Cast-in-place concrete storm water and wastewater tanks in the sub-grade cellar levels contribute to LEED gold status. A 27”-thick, 10,000 psi slab at level 7 to transfers the columns supporting nine student apartment levels, a mechanical level and main roof level over the academic podium. The 4-story, column-free auditorium space with sloping, cast-in-place concrete structure supports a 700-seat auditorium venue.

The foundation structure consisted of reinforced concrete spread footings and foundation mats bearing directly to 40 tsf Building Code Class 1b bedrock. Permanent high strength tie down anchors were utilized in the foundation mats supporting the lateral load resisting shear wall cores. Perimeter foundation walls varied in thickness between 24” and 30” to resist lateral earth pressures, adjacent street and building surcharges, and hydrostatic pressures resulting from a high design water table. The base of the foundation walls was socketed into bedrock to serve as a hydrostatic cut-off.

The superstructure employed a hybrid of traditional flat plate construction with 11” to 12” thick slabs in the academic levels to accommodate 30’ x 30’ bays and public assembly live loading. Some larger bays and irregular double-height spaces were framed with concrete beams. 8” thick slabs were used at the student apartment levels with a staggered column scheme to accommodate the irregular module of the residential layouts.

Structural transfer levels were used: long span, 60’ to 80’-long, 10’-deep steel trusses at the 4th floor over the auditorium; a 27”-thick, 10,000 psi reinforced concrete transfer slab at level 7 to transition the academic program from the residential program; and a 16”-thick, 6,000 psi reinforced concrete transfer slab at level 16 to accommodate the zoning set-back at the top of the structure.

The building has a projected LEED Gold rating, serving as a model for sustainable design in New York City. The Univeristy Center will feature planted green roofs at both the 7th and 8th fl set-backs, as well as cast-in-place concrete storm water and wastewater tanks in the sub-grade cellar levels.