Karl J. Rubenacker, PE, SE, CWI, is a partner at New York City based structural engineering firm Gilsanz Murray Steficek, LLP. Karl holds a BE in Civil Engineering from Cooper Union and an MS in Civil Engineering from Caltech. He has over thirty years of structural engineering experience designing a broad array of structures from new construction to renovations, and including high rise, commercial, residential, and educational buildings. His experience also includes auto and rail bridges, aqueducts, parking garages, arenas, treatment plants and pumping stations. Karl is a Past-President of the Structural Engineers Association of New York and he is active in several professional committees, including the ACEC-NY structural codes committee, the SEAoNY Codes and Standards Committee, the ASCE/SEI Disproportionate Collapse Standards and Technical Committees, and the NYC Buildings Department Structural Technical Committee.

EDUCATION

CALIFORNIA INSTITUTE OF TECHNOLOGY — Pasadena, CA
Master of Science in Civil Engineering — 1990

THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART — New York, NY
Bachelor of Engineering in Civil Engineering — 1989

LICENSES

Registered Professional Structural Engineer in California
Registered Professional Engineer in New York
Registered Professional Engineer in Arkansas
Certified Welding Inspector

PROFESSIONAL ASSOCIATIONS

Past-President, Structural Engineers Association of New York (SEAoNY),
Co-Chair, National Council of Structural Engineers Associations (NCSEA) Code Advisory Committee on Existing Buildings/Structural Retrofit
Co-chair, SEAoNY Codes and Standards Committee
Member, Structural Code Committee, American Council of Engineering Companies New York Metro Region (ACEC-NY)
Member, ASCE/SEI Disproportionate Collapse Technical Committee, ASCE/SEI Disproportionate Collapse Standards Committee, ASCE/AEI Facade Access Committee, American Society of Civil Engineers (ASCE) Structural Engineering Institute (SEI)
Member, New York City Department of Building's Structural/Foundation Technical Committees for the Model Code Program Building Code Revision for 2008, 2014, 2020 Building Codes.
Member, New York City Department of Building's Special Inspections Advisory Committee

EXPERIENCE

GILSANZ MURRAY STEFICEK — January 1998 to Present
PARTNER

General Motors Building – 767 Fifth Avenue, New York, NY
Since 2003, GMS has provided structural engineering and façade consulting services for the owner and tenants at this 1960's vintage building in Midtown Manhattan. We have provided services for the re-cladding, roofing, and waterproofing of the first two stories, the two-story infill project at Madison Avenue and the plaza reconstruction which supports the Cube. We have provided tenant renovations for Apple, York Capital Management, Jana Partners, Citigroup, Bank of America, The Switzer Group, and pop-up retail stores among others.

315 Hudson Street – New York, NY
GMS was retained to provide structural services for the 40,000 sf roof renovation of this 10-story office building in Lower Manhattan which included a new one-story addition event space, relocation of convenience stair and elevator, new roof top units, expanded retail entrance, new exterior courtyards and green spaces. In addition, GMS provided waterproofing services for the ground floor and roof top courtyards. GMS also provides services for various tenant alterations.

Transbay Transit Center – San Francisco, CA
GMS provided subject matter expert structural engineering consulting for the Mediation regarding this project.

Bowlero – Various Locations
GMS has provided structural engineering services for Bowlero at sixteen locations across the country since 2017. Work includes redevelopment of existing properties for the bowling centers, new interior fitout as well as supports for architectural details. GMS has assisted with new Bowlero centers in New York, New Jersey, California, Georgia, Florida, Virginia and Massachusetts.

Rocky Top Student Center Quinnipiac University – Hamden, CT
The new 85,000 sf student center is the heart of the new complex at Quinnipiac University's York Hill campus. It holds the campus' central mechanical plant in the basement, and campus dining areas and student activity spaces. The frame is constructed of concrete shear walls, heavy timber and glulam beams and girders and columns using concealed steel connector plates. The floor and roof systems also use heavy timber, glulam beams and girders, as well as, timber decking.

Times Square Retail – New York, NY
GMS structural engineers worked with the landlord to convert the this large retail space back to "white box" condition and improve the space by extending the basement and prior to demising the area into smaller stores. We also provided structural engineering to the "sister" tenants for a new 51,000 sf flagship and a new 52,000 sf flagship within the block long building. The fast-track schedule and complicated coordination issues require the extensive participation of GMS in all aspects of the design and construction.

12-14 Warren Street – New York, NY
GMS provided structural engineering Services to this 13-story 50,000 sf, ultra-luxury residential concrete building with a green roof system in Tribeca. GMS is also providing the demolition/sequence drawings to keep portions of the existing five-story building.

TD Bank Sports Arena – Quinnipiac University, Hamden, CT
The new 141,000 sf twin arena houses a 3,286 seat rink for ice hockey, a 3,570 seat arena for basketball, fitness room, locker rooms, and other support facilities. One of just four twin arenas in the Northeast, the sports center is one-story tall with lower levels built into the hill. Each arena has unobstructed sight lines from all seats thanks to three dimensional roof trusses with 164 foot clear spans

Confidential Office Building – Jersey City, NJ
GMS worked with this building's owner to investigate the connections of the façade panels and establish a testing and repair protocol for the 22-story, 800,000 sf building.

Umbilic Torus Sculpture at the Simon Center – SUNY Stonybrook, NY
Structural engineering for a bronze and granite sculpture and plaza reconstruction.

510 Madison Avenue – New York, NY
Provided structural engineering and building envelope consulting services for a new 30-story, 300,000 sf office building with ground level retail, health club and other amenities.

Hurricane Sandy Assessments
GMS was contracted by the New York City Department of Buildings to perform structural assessments with DOB electrical and mechanical inspectors for all buildings within Zone A after Hurricane Sandy.

One Jackson Square – 122 Greenwich Avenue, New York, NY
Structural design services for a new 11-story, 60,000 sf luxury residential building that also includes 8,000 sf of retail space all built atop a subway line. GMS was also retained to assist in detailing this unique undulating curtain wall.

Rocky Top Student Center at the York Hill Campus – Quinnipiac University, Hamden, CT
Structural engineering for the new, 85,000 sf heavy timber Student Center, with the campus' central mechanical plant in the basement, campus dining areas and student activity spaces.

Parking Garage at the York Hill Campus – Quinnipiac University, Hamden, CT
Design for the five-story, 600,000 sf free-standing, precast concrete parking garage for approximately 2,000 cars.

World Trade Center 7 – Forensic Study, New York, NY
Development of structural models and collapse hypothesis' for NIST.

Sierra Bonita Mixed-Use Affordable Housing – West Hollywood, CA
A five-story mixed-use building, where steel framing with long span decks are used to accommodate the parking grid below and to minimize floor to floor height. The building contains 43 one bedroom units; commercial/retail space is located at ground level and resident parking is located below grade. This project received a SEAoNY 2012 Excellence in Structural Engineering Winner-New Under $30M, a SEAOSC Award of Merit for Excellence in Structural Engineering 2011 – New Construction and a Design Concept Award from the Los Angeles Business Council in 2008.

250 Hudson Street – New York, NY
Structural design services for converting the former printing trades building into a state-of-the-art modern office center with a magnificent green roof. GMS reinforced the existing roof and designed the trellis and its connections to the base structure.

MoMA PS 1 – HVAC Upgrade, Long Island City, NY
MoMA PS1 is the leading contemporary art center in New York, preserving much of the original "school" architecture as well as most of its unique classroom-sized galleries. The current project will upgrade the systems in the south wing.

Brooklyn Supreme and Family Courthouse – 330 Jay Street, Brooklyn, NY
Design of a 1.1 Million sf, 32-story, mixed-use court and office building. Steel structure designed for seismic, progressive collapse, and blast loads.

Hoboken Ferry Terminal – Hoboken, NJ
Rehabilitation of six original ferry slips at historic Hoboken Terminal including the reconstruction and repair of a portion of the building's substructure and superstructure, construction of ferry service ticket offices, rehabilitation of the building roof and Tiffany skylights, rehabilitation of the copper fascia on the exterior of the building, waterproofing and insulating the exterior walls near the ferry slips, and rehabilitation of the interior finishes of the ferry terminal area.

695 East Main Street – Stamford, CT
GMS was retained to perform comprehensive inspection of the façades, roof and structural systems of this 1980s vintage curtain wall building located in downtown Stamford Connecticut. Construction documents for the replacement of the roofs, repairs to the façades and remediation of structural issues were also undertaken.

880 Fifth Avenue – New York, New York
Garage repairs at a landmarked 21-story apartment building with penthouse.

Sportime – Randall's Island, NY
Expansion of the John McEnroe Tennis Academy. GMS has provided schematic alternatives for a new field house within the proposed expansion.

New York University, Tisch School of the Arts – New York, NY
Multiple renovations of interior space at 715-719-721-725 Broadway spanning over 10 years. Projects include structural work for new classrooms, office space, mechanical systems, storefront, recording studios, etc.

New York University, University Club and School of Education – New York, NY
Interior renovation of two existing buildings to create one functional 55,000 sf space, plus a new one-story mechanical penthouse. Provided controlled inspection and in-situ materials testing services.

75 Park Place – New York, NY
Renovation of the existing building, including a new double-height lobby. Structural, curtainwall and inspection services provided.

SUNY Stonybrook Humanities Building – Long Island, NY
Design of a 60,000 sf steel addition to an existing 40,000 sf, three-story concrete building. Engineered 100% of the connections.

Hoboken Railroad Yard B – Hoboken, NJ
General renovation of a railroad yard including a new four-track, 65 foot long rail bridge, new 26,000 sf multi-purpose building with sections for train inspections, locomotive fueling and sanding, train washer and employee facility. Site improvements include structural supports for the catenary, structural supports for the yard lighting and site retaining wall. Winner of the 2003 ACEC Gold Award.

Ninth Avenue Towers – New York, NY
Schematic design of 2.5 Million sf mixed use office/residential/hotel complex over the rail yards on the west side of Manhattan.

52 Broadway – New York, NY
GMS provided structural engineering for both the landlord and the tenant to upgrade the building for the new UFT offices - approximately 280,000 sf. Eight columns of this 20-story building were cut and re-supported at the 2nd floor to allow for a new 900-seat auditorium at the lower levels and to provide a new ramp down to parking. GMS also engineered all of the new steel connections and performed NYC Controlled Inspections.

Abbott Capital Management, 1290 Avenue of the Americas – New York, NY
GMS provided structural engineering for the interior fit-out of approximately 34,700 sf on the 9th floor. The project included structural support for a new high density filing system, a folding partition, a glass wall, the review of slab cores and trenching for electrical and plumbing needs, as well as, special inspection services.

New York University, Clive Davis Department of Recorded Music – New York, NY
Renovation of 5th Floor of 194 Mercer Street to accommodate sound studios and classrooms.

New York University – 75 Third Avenue Data Center, New York, NY
Reinforcement of basement at 75 Third Avenue Dormitory to support a new data center with 175 psf loading. Also analyzed existing roof structure to receive new mechanical equipment.

838 Fifth Avenue – New York, NY
Design of a 26,000 sf addition to an existing 43,000 sf, 11-story building. Interior renovation and conversion from office to residential space. Provided controlled inspection services.

217 Broadway – New York, NY
Design of three-story, 30,000 sf addition on top of an existing seven-story, 115,000 sf building, plus interior renovation of the existing building. Provided controlled inspection services.

264 West 11th Street – New York, NY
Design and inspection for the renovation of an existing 10,000 sf, four-story brownstone. Provided controlled inspection and in-situ materials testing services.

PREVIOUS EXPERIENCE – STRUCTURAL ENGINEER

Post-Northridge Conditions Assessments, Bank of America – Los Angeles, CA
Part of a team which performed post-earthquake condition assessments of over 48 Bank of America branches in Los Angeles County. Assessments were performed in accordance with ATC-20 methodology.

Fred Waring Drive Bridge – City of Indio, CA
Five span, 6 lane, hinged post-tensioned concrete bridge. In compliance with CALTRANS standards and consideration of column plastic hinging effects on superstructure.

Mission Valley West Light Rail Transit Extension – San Diego, CA
Design calculations for peer review of 35 span post-tensioned concrete bridge and elevated reinforced concrete railway station.

Penasquitos Pipe Bridge – San Diego, CA
Final design of three span, 48" diameter welded steel pipe bridge for the Penasquitos Trunk Sewer.

Lamont Public Utility District Wastewater Treatment Plant – Lamont, CA
Reinforced concrete headworks, influent, effluent structures.

Foothills and River Mountains Pump Station – Nevada
220' x 115' x 80' reinforced concrete pump station structures to supply Las Vegas with water.

3.3 MG Eastside Reservoir – California
200' diameter x 19' high welded steel above ground tank.

San Sevaine Channel Improvements – San Bernadino County, CA
Design of 60' wide x 14' high reinforced concrete rectangular flood control channels.

San Diego County Water Authority Pipeline4B, and Aqueduct # 1 Relocation – San Diego
Design of 4-mile long, 200psi, 96" diameter welded steel pipeline, and 800' long, 48" diameter double barrel continuous welded steel pipelines with appurtenances. Provided shop and field inspection services.

PRESENTATIONS AND JURIES

ASCE/SEI Design Guide Alternative Load Path Analysis Guidelines for Disproportionate Collapse, R. Gilsanz, K. Rubenacker, ASCE/SEI Structures Congress, Orlando, FL, April 24-27, 2019.

Challenges and Complexity of Air-Rights Structures - Case Study: One Jackson Square, by Karl Rubenacker and Philip Murray, 2015 Structures Congress, Portland, OR, April 24, 2015

Design of a High-Rise Steel Building to Resist Disproportionate Collapse, R. Gilsanz, E. Kim, P. Murray, K. Rubenacker, 37th IABSE International Symposium, Madrid, Spain, 3-5 September 2014

Design of a High-rise Steel Building to Resist Disproportionate Collapse, by Karl Rubenacker, 2014 ASCE Metropolitan Section Structures Group Spring Lecture Series, New York, NY, May 13, 2014

Structural Design Recommendations for Building-Supported Façade Access Equipment, 2014 Structures Congress, Boston, MA, April 4, 2014

Design of a High-Rise Steel Building to Resist Disproportionate Collapse, 2014 Structures Congress, Boston, MA, April 3, 2014

Sierra Bonita: Innovative use of Long Span Metal Deck Slabs and Shored Construction, 1st Annual Residential Building Design and Construction Conference, February 2013.

PUBLICATIONS Façade Assessment Equipment, by Task Committee on Façade Access Design Guidelines, ASCE/AEI, 2015