

BENJAMIN M. CORNELIUS, P.E., C.E., S.E.

Partner

LERA Consulting Structural Engineers, RLLP
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**Profile**

Benjamin Cornelius is a structural engineer with over 25 years of experience in the design and rehabilitation of structures, including tall buildings and other complex structures. His projects include the Broad Museum in Los Angeles, the renovation and expansion of the National Baseball Hall of Fame, and the supertall TransNational Place in Boston. Mr. Cornelius leads LERA's Investigations and Expert Witness Practice and is an experienced expert witness. He has conducted over thirty forensic investigations in North America, Europe, and Asia in disputes totaling over \$1 billion. He has provided consultations in disputes involving tall buildings, residential structures, embassy complexes, historic buildings, sports and entertainment structures, and transportation facilities. He has testified in mediation, arbitration, and court proceedings. Mr. Cornelius is Chair of the Executive Committee of ASCE's Forensic Engineering Division and has served as an adjunct faculty member at the Rhode Island School of Design.

Professional Experience**LERA Consulting Structural Engineers (LERA)****2001 – Present**

Partner

2016 – Present

*Director, LERA Investigations and Expert Witness Practice**Partner-in-charge, LERA Partnership Communications**Project Experience, Investigations*

- *Structural Steel Connection Fit-Up Issues and Failure.* Retained to investigate the causes of fit-up problems and a failure in a long-span sports structure in the U.S. Made two presentations before a mediator and over 80 representatives of parties, attorneys, experts, and insurers at two mediation sessions.
- *Construction Logistics and Quality.* Retained to investigate the effects of changes to craneage on construction productivity and quality at a high-rise building project.
- *Design Standard of Care.* Retained to evaluate design professional standard of care issues in connection with a structural steel failure at a multi-billion-dollar transportation facility.
- *Differential Column Shortening.* Retained as an expert to evaluate the effects of differential shortening in a 50-story, reinforced concrete hotel structure.
- *Architectural Precast Concrete Cracking.* Retained to evaluate the causes of cracking in architectural precast concrete elements installed for an island park structure.
- *Steel Connection Failure.* Retained to investigate and provide expert services concerning a connection failure at a large sports and entertainment structure under construction in the U.S.
- *High-Strength Steel Fasteners.* Retained to investigate and provide expert services concerning failures of large diameter, high-strength steel bolts at a high-rise building in Europe.
- *Precast Concrete Pier Damage.* Retained to investigate and provide expert services in connection with damage to architecturally exposed precast concrete piers installed in a riverbed to support a park landscape constructed over a river.
- *Reinforced Concrete Column Failure.* Retained at the direction of the authority having jurisdiction to investigate failures of columns in a 40-story residential building under construction.
- *Collapse of Masonry Facade Construction.* Retained to investigate and provide expert services in

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connection with the collapse of back-up concrete masonry unit construction at a high-rise condominium tower under construction.

- *Cracking in Galvanized Steel Spire.* Retained to investigate and provide expert services concerning cracks discovered in certain framing members installed in the spire of 1000-foot-tall office and hotel tower in the northeastern US.
- *Long-span Airport Structure.* Retained to investigate and provide expert services concerning structural design revisions made to a long-span airport structure under construction in Central Asia.
- *Precast Concrete Curtainwall Collapse.* Retained to investigate and provide expert services concerning a precast concrete curtainwall collapse at a 70-story condominium building under construction.
- *Settlement Damage Due to Underpinning and Dewatering.* Retained to investigate and provide expert services concerning damage alleged to have been caused by underpinning and dewatering at an adjacent construction project.
- *Stadium Steel Connection Design.* Retained to investigate and provide expert services concerning quality of contract documents produced for a stadium in North America.
- *Flood Damage.* Retained to investigate and provide expert services concerning alleged damage to residential structures caused by site drainage associated with a new adjacent condominium complex.
- *Structural Masonry Defects.* Retained to investigate and provide expert services concerning defects in a structural masonry and slab-on-deck residential building.
- *Pillowing and Cracking of Concrete Structure.* Retained to investigate and provide expert services concerning undesirable expansion and cracking of concrete floor slabs over large areas of a mid-rise building under construction.
- *Concrete Pool and Ancillary Structures.* Retained to investigate and provide expert services concerning cracking of a 40,000-sf concrete pool, surrounding concrete decks, and masonry bathhouses.
- *Concrete Balconies at High-rise Residential Tower.* Retained to investigate and provide expert services concerning cracking and spalling of cantilevered concrete balconies and designed repairs at a high-rise residential building in North America.
- *Concrete Foundations.* Investigated cracking of reinforced and plain concrete foundations observed at a 100-building residential complex.
- *Mechanically Stabilized Earth (MSE) Retaining Walls.* Retained to investigate and provide expert services concerning cracking and purported settlement of MSE retaining walls.
- *Adaptive Reuse of Existing Structure.* Retained to investigate and provide expert services concerning deviations from contract drawings and specifications for the reinforcement of existing floors to accommodate new equipment.
- *Effects of Temporary Construction Loading.* Retained to investigate and provide expert services concerning claims of damage due to the installation and operation of construction equipment at an existing mid-rise condominium building.
- *Historic Building Settlements.* Retained to investigate and provide expert services concerning settlement and cracking of a 5-story historic limestone and brick structure adjacent to deep excavations for a neighboring construction project in the northeastern United States.
- *Single-Family Home Construction.* Retained to investigate and provide expert services concerning defects in wood structural components and concrete foundations at a custom single-family home in New York.
- *Masonry Facades and Parking Slabs.* Retained to investigate and provide expert services concerning cracking in the masonry facade, foundation walls, and garage slab of a complex of condominium buildings in North America.
- *Party Wall Water Intrusion.* Retained to investigate and provide expert services concerning water infiltration from a building being renovated into the brick rowhome next door.

Project Experience, Peer Review

- *45 Broad Street, New York, NY.* Peer reviewed the secant pile walls and caisson foundations of this 80-story residential tower.
- *Effects of Adjacent Construction.* Reviewed project plans, specifications, filings, and license agreement requests for proposed developments and assessed potential effects on behalf of adjoining property owners.
- *138 East 50th Street, New York, NY.* Peer reviewed this 64-story condominium tower.

Project Experience, Design

- *Trinity Tower, Seattle, WA.* Structural Engineer-of-Record for this 30-story condominium tower with 7 subgrade levels, including the performance-based design of the seismic load resisting system.
- *Brooklyn College Science and Classroom Building Renovations, Brooklyn, NY.* Structural Engineer-of-Record for this feasibility study of major renovations of approximately 1-million square feet of space in two 1930s campus buildings to serve as Brooklyn College's new science lab and classroom buildings.
- *Hunter Campus Schools Expansion, New York, NY.* Structural Engineer-of-Record for this expansion of an existing educational building.
- *15 Broad Street, New York, NY.* Structural Engineer-of-Record for this 30th Floor interior and façade alteration.
- *Convention Center and Public Transit Blast Enhancements.* Prepared schematic designs of blast enhancements for a convention center design project in North America.

Associate Partner

2012 – 2015

*Director, LERA Investigations and Expert Witness Practice**Project Experience, Investigations*

- *Design and Construction Defects in High-rise Reinforced Concrete Condominium Building.* Retained to investigate and provide expert services in a matter involving design and construction defects discovered in a 50-story reinforced concrete hotel and condominium tower with post-tensioned concrete floors.
- *Airport Runway and Taxiway.* Investigated scaling, cracking, spalling, and other defects in a reinforced concrete runway structure in North America, measuring over 200 feet wide and 2 miles long.
- *Steel Pile Corrosion.* Investigated corrosion damage and predicted future performance of steel pile foundations at a government complex in Central Asia.
- *Structure and Building Services Coordination.* Investigated conflicts between building structure and services in a government facility in Europe.
- *Blast Design.* Investigated the adequacy of blast designs of a 90,000-sf reinforced concrete structure in Central Asia.
- *Pre-Cast Concrete Railway Structure.* Investigated cracking and spalling of pre-cast concrete deck panels supporting a 5-mile long segment of an operational commuter rail system and designed repairs.
- *Structural Drawings and Specifications Quality.* Investigated the quality of contract documents produced for a steel-framed, single-family home in North America.
- *Post-Tensioned Concrete Slabs.* Investigated the design and construction of post-tensioned slabs in a high-rise building in North America.

Project Experience, Design

- *Bureau of Land Reclamation, Boulder City, NV.* Project manager for this 45,000-sf office building, featuring architecturally exposed steel and concrete structural components.
- *CUNY Kingsborough Community College Performing Arts Center Renovations, Brooklyn, NY.* Project manager for alterations and additions to this existing facility.
- *CUNY Medgar Evers College, Carroll Street Building Renovations Feasibility Study, Brooklyn, NY.* Project manager for a feasibility study of alterations and additions to three interconnected academic buildings.
- *Broad Museum, Los Angeles, CA.* Project manager for the structural design of this 80,000-sf museum in collaboration with the team's local engineer. This project featured a nearly three-quarter-acre, column-free gallery space and 30-foot cantilevered, post-tensioned slabs.
- *Center for Design Innovation, Massachusetts School of Art, Boston, MA.* Project manager for the adaptive reuse of an existing gymnasium building. The design featured a new structure housing a raised gallery and campus entry portal, a new exhibit hall, and the reconfiguration of existing spaces for classrooms and lecture halls.

Senior Associate

2003 – 2011

Engineering Staffing Manager, New York Office. Coordinated with firm partners to allocate personnel to projects, identify hiring needs, and interview engineering candidates office wide.

Project Experience, Investigations

- *Structural Drawings and Specifications Quality.* Investigated the reasons for revisions to member sizes, connection forces, and details for a 90,000-seat stadium in Europe.
- *Embassy Complex.* Investigated quality of structural bid documents for, and the effects of seismic loading on, a complex of reinforced concrete structures in North America.
- *University Library.* Investigated excessive deflections of reinforced concrete slabs and cracking and spalling of concrete members at a 125,000-sf library in North America.

Project Experience, Peer Review

- *One World Trade Center (Freedom Tower), New York, NY.* Peer reviewed this 94-story super-tall office tower.
- *Two World Trade Center, New York, NY.* Peer reviewed this 78-story super-tall office tower.

Project Experience, Design

- *TransNational Place, Boston, MA.* Project manager for this supertall office building proposed for a site at 115 Winthrop Square. The project proceeded into design development phase before stopping in 2008 amid a slowing real estate market.
- *250 East 49th Street, New York, NY.* Project manager for this 24-story residential tower.
- *SUNY Stony Brook Graduate Chemistry Building Renovation, Stony Brook, NY.* Project manager for alterations and additions to this 300,000-sf classroom building.
- *773 Prospect Avenue, Bronx, NY.* Project manager for this 7-story shelter for battered women and their children.
- *Shelter Island House, Shelter Island, NY.* Project manager for this custom, 3500-sf, timber-framed home featuring 12-foot cantilevers and exposed cypress framing.
- *47 East 91st Street Condominium Building, New York, NY.* Project manager for this 9-story condominium tower built over an existing and continuously operating, one-story bank branch.
- *1281 Madison Avenue, New York, NY.* Project manager for the gut renovation of a rowhome.
- *Albert Einstein College of Medicine Comprehensive Opioid Treatment Facility, Bronx, NY.* Project manager for this new 45,000-sf healthcare building.
- *MetroGreen Condominiums, Stamford, CT.* Project manager for this 53,000-sf affordable housing building, featuring a concrete podium and four stories of wood-framed construction.
- *Stamford Ninth Grade Center, Stamford, CT.* Project manager for this 60,000-sf addition, built over the existing locker room facilities at Stamford High School. The project included a new gymnasium, entryway, classrooms, and 20-ft tall concrete retaining wall to address site slope.
- *Danbury HeadStart School, Danbury, CT.* Project manager for the gut-renovation and expansion of an existing school building.
- *Hampshire Country Club Renovation, Mamaroneck, NY.* Project manager for the renovation and expansion of the clubhouse.
- *NYC DEP West of Hudson Headquarters, Kingston, NY.* Project manager for the renovation and expansion of this 98,000-sf facility housing laboratories and the regional headquarters of the Department of Environmental Protection.

Associate

2001 – 2002

Project Experience, Design

- *Las Vegas Springs Preserve Visitor Center, Las Vegas, NV.* Project manager for this 90,000-sf visitor center and exhibition space, featuring architecturally exposed structure and a 20,000-sf sunshade.
- *National Baseball Hall of Fame Renovation and Expansion, Cooperstown, NY.* Project manager for this renovation and expansion, which included repairs of existing masonry structures, expanded and reorganized galleries, and a new 3-story grand stair atrium with architecturally exposed steel framing.
- *Hunts Point Youth Center, Bronx, NY.* Project manager for this 10,000-sf gymnasium and community center featuring exposed, arc-shaped steel roof girders spanning the gymnasium and indoor track.

Lawrence Gordon Architects (LGA)**2000 – 2001**

Designer

Project Experience, Design

- *Custom Home, Larchmont, NY.* Architectural designer and detailer of this custom home.
- *Municipal Building, Larchmont, NY.* Architectural designer and detailer of this volunteer ambulance corps building.
- *Various Renovation and Expansion Projects, Northeast U.S.* Designer and architectural detailer of several additions to single-family homes.
- *Introduced the firm to computer-aided drafting.*

LERA Consulting Structural Engineers (LERA)**1994 – 2000**

Associate

2000

*LERA Librarian**Project Experience, Design*

- *Federal Facility Security Enhancement, North America.* Project manager for this security upgrade project, which included reinforcements to an existing high-rise building to address blast loading, a blast-resistant site wall, and vehicle impact barriers.
- *Shanghai World Financial Center, Shanghai, China.* Project manager for design of this supertall office building.

Engineering Designer

1994 – 1999

*LERA Librarian**Project Experience, Investigations*

- *Chek Lap Kok Airport, Hong Kong.* Assisted in the review of the tied-arch roof system for this airport.

Project Experience, Design

- *St. Regis Hotel, Shanghai, China.* Project manager for this 38-story hotel.
- *Neiman Marcus Flagship Store Expansion, San Francisco, CA.* Project manager for this 5-story expansion of an existing department store. The project featured new retail space, a new truck dock, and seismic enhancements serving the combined building.
- *Rock & Roll Hall of Fame Circular Exhibit, Cleveland, OH.* Project manager for the fit-out of the circular exhibit space within the museum.
- *World Trade Center Renovations and Structural Integrity Inspections.* Designer of renovations to the complex, including security enhancements for pedestrian and vehicle attacks and tenant fit-outs. Structural integrity inspector for the facades of the twin towers and low-rise buildings, and the antenna atop One World Trade Center.
- *Federal Energy Regulatory Commission, Washington, D.C.* Reviewer of shop drawings for this reinforced concrete government building.
- *PANYNJ Heliport, New York, NY.* Designer of a new vehicle security gate at the entrance to the facility.
- *5 World Trade Center Emergency Generators, New York, NY.* Designer of supplementary framing and temporary measures to accommodate the installation of new rooftop generators.

Teaching Experience**Rhode Island School of Design (RISD)****2011 – Present**

Adjunct Faculty and Structural Advisor, Department of Interior Architecture, Adaptive Reuse Thesis Program

American Institute of Architects, Continuing Education System**2014 – 2019**

Presenter, "Adaptive Reuse – Structural Concepts and Approaches," delivered at various architectural firms.

Science Olympiad, Pleasantville Middle School**2015 – 2019**

Coach, Mission Possible Team

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Boston Society of Architects**2013 – 2014**

Structural Mentor for “Duck-Work Wood Landscape Concept,” Competition Finalist, *Urban Timber: From Seed to City*

Professional Licenses and Designations

Licensed Professional Engineer, New York	1999 – Present
Licensed Professional Engineer, New Jersey	2015 – Present
Licensed Professional Engineer, Rhode Island	2016 – Present
Licensed Professional Engineer, Pennsylvania	2017 – Present
Licensed Professional Engineer, Maryland	2017 – Present
Licensed Professional Engineer, Connecticut	2017 – Present
Licensed Professional Engineer, District of Columbia	2017 – Present
Licensed Professional Engineer, Florida	2018 – Present
Licensed Professional Engineer, Georgia	2018 – Present
Licensed Professional Engineer, Texas	2018 – Present
Licensed Professional Engineer, Indiana	2019 – Present
Licensed Professional Engineer, Louisiana	2019 – Present
Licensed Professional Engineer, Nevada	2020 – Present
Licensed Civil Engineer, California	2014 – Present
Licensed Civil Engineer, Washington State	2014 – Present
Licensed Professional Civil Engineer, Massachusetts	2017 – Present
Licensed Structural Engineer, Washington State	2014 – Present
Designated Model Law Structural Engineer	2014 – Present

National Council of Examiners for Engineering and Surveying (NCEES)

Education

Bachelor of Architectural Engineering, The Pennsylvania State University	1994
Phi Alpha Epsilon Architectural Engineering Honor Society	1994 – Present
Tau Beta Pi Engineering Honor Society	1992 – Present
Professional Practice Activities Award	1994
<i>Professional Engineers in Private Practice of Pennsylvania</i>	
Gladys M. Baird Memorial Scholarship Award	1993

Publications

Co-Author, “ Chapter 6: Forensic Engineering Reports ”	2018
<i>Guidelines for Failure Investigation: Second Edition</i> , American Society of Civil Engineers, Forensic Engineering Division, Committee on Forensic Investigation	
Author, “ Five Key Steps Project Teams Can Take to Manage Risk in Property Line Construction Projects ”	2016
<i>The Critical Path</i> , Defense Research Institute, Construction Law Committee Newsletter, Volume 20, Issue 4	

Author, "LERA Assists Property Owners Adjacent to Construction Projects" LERA Summer 2016 Newsletter	2016
Author, "Designing Structures for the Effects of Extreme Events" Construction Law Seminar, Defense Research Institute, New Orleans, LA	2016
Author, "Getting Back to Nature...in Las Vegas" <i>Modern Steel Construction</i>	August 2008
Author, "Exposed Structural Systems Enhance Sustainability" <i>STRUCTURE Magazine</i>	April 2008

Presentations

Presenter, "Enhancing Forensic Engineering through Custom Software Development" American Society of Civil Engineers, Metropolitan Section, Forensic Engineering Group, Continuing Education Lecture, New York, NY	April 2019
Moderator, "Qualitative and Quantitative Sampling for Construction Defect Investigations" American Society of Civil Engineers, 8th Congress on Forensic Engineering, Austin, TX	November 2018
Speaker, "Techniques and Protocols for Pre-Construction Surveys" American Society of Civil Engineers, 8th Congress on Forensic Engineering, Austin, TX	November 2018
Invited Presenter, "Forensic Strategies that Illuminate the Root Causes of Problems on Construction Projects" American Society of Civil Engineers, Structural Engineering Institute, Geo-Structures Confluence 2018, St. Charles, MO	November 2018
Invited Presenter, "Construction Dispute Resolution Through Forensic Engineering" American Society of Civil Engineers, Structural Engineering Institute, Structures Congress 2018, Fort Worth, TX	April 2018
Invited Co-Presenter with Kriton A. Pantelidis, "Managing Design Professionals' Risk in the Design and Construction of Property Line Building Structures" American Society of Civil Engineers, Structural Engineering Institute, Structures Congress 2018, Fort Worth, TX	April 2018
Invited Co-Presenter with Kriton A. Pantelidis, "Managing Risk in the Design and Construction of Property Line Building Structures" American Council of Engineering Companies, 2017 Fall Conference, Orlando, FL	October 2017
Invited Presenter, "Four Strategies Forensic Engineers Use to Unravel Construction Disputes" Council of American Structural Engineers Risk Management Seminar, Chicago, IL	August 2017
Co-Presenter with Kriton A. Pantelidis, "Risks of Property Line Construction for Design Professionals" Defense Research Institute Construction Law Committee Webinar	2017
Invited Speaker, "Four Key Strategies for Unraveling Construction Disputes" Structural Engineers Coalition of Connecticut, New Haven, CT	2016
Invited Panelist, "Engineering and Construction Issues in Catastrophic Loss" Defense Research Institute Construction Law Seminar, New Orleans, LA	2016
Invited Presenter, "Enhancing the Viability of Urban Housing Projects through Structural Buildover and Reuse" Residential Building Design and Construction Conference, University Park, PA	2016
Co-presenter with Doug Gonzalez, P.E., "Adaptive Reuse: Structural Concepts and Approaches" Various Architectural Firms	2014 – Present
Panel Discussion Moderator, "The Fog of Failures: Understanding and Explaining Complex Engineering Issues" Construction Law SuperConference, San Francisco, CA	2013

Invited Presenter, "The Art of Structural Design" Rotary Club, Pleasantville, NY Rotary Club, Briarcliff, NY	2010
Invited Presenter, "The World Trade Center" Architectural Engineering Department, The Pennsylvania State University, University Park, PA	May 2002
Presenter, "Comparison of Masonry Provisions: NYC Building Code versus IBC 2000" Structural Engineers Association of New York, New York, NY	2002

Project Honors and Awards

MassArt Design and Media Center , Boston, MA American Architecture Award The Chicago Athenaeum Museum of Architecture and Design/The European Centre for Architecture Art Design and Urban Studies	2017
Design Award – Education Facilities Design Boston Society of Architects (BSA)	2016
The Broad , Los Angeles, CA Project of the Year, Southern California <i>Engineering News-Record (ENR)</i> Regional Best Projects	2016
Best Project, Southern California – Cultural/Worship <i>Engineering News-Record (ENR)</i> Regional Best Projects	2016
Grand Prize 46 th Annual Los Angeles Business Council (LABC) Architectural Awards	2016
Finalist – Architecture + Engineering Architizer A+ Awards	2016
Design Award of Honor American Institute of Architects New York (AIA NY)	2016
Architecture Award The Chicago Athenaeum Museum of Architecture and Design	2015
Design Award of Honor American Institute of Architects Los Angeles (AIA LA)	2014
Las Vegas Springs Preserve Visitor Center , Las Vegas, NV Platinum Award for Engineering Excellence American Council of Engineering Companies New York (ACEC NY)	2008
Award of Merit American Institute of Steel Construction, IDEAS Award	2008
AIA Nevada Citation Award	2007
City of Las Vegas Mayor's Urban Design Award	2007
AIA Nevada Honor Award, Unbuilt Project	2003

Professional Honors and Awards

Certificate of Recognition, Public Service in Response to September 11, 2001 Terrorist Attack <i>American Society of Civil Engineers, New Jersey Section</i>	2002
Certificate of Appreciation, World Trade Center Rescue and Recovery Effort <i>City of New York</i>	2001

Professional Affiliations

Chair, Executive Committee <i>ASCE Forensic Engineering Division</i>	2020 – Present
Vice-Chair <i>ASCE Metropolitan Section, Forensic Engineering Group</i>	2019 – Present
Member <i>ASCE Forensic Engineering Division</i>	2015 – Present
Immediate Past Chair, Committee on Forensic Investigations <i>ASCE Forensic Engineering Division</i>	2016 – 2018
Member <i>Structural Engineers Association of New York (SEAoNY)</i>	2016 – Present
Member <i>ASCE Metropolitan Section, Forensic Engineering Group</i>	2014 – Present
Affiliate Member, Forum on Construction Law, Design Division <i>American Bar Association</i>	2012 – Present
Member <i>American Society of Civil Engineers (ASCE)</i>	1998 – Present
Chair, Professional Practice, Forensic Investigations Track <i>ASCE Forensic Engineering 7th Congress, Miami, Florida</i>	November 2015
Member <i>ASCE 2015 Forensic Congress Steering Committee</i>	2014 – 2015
Volunteer <i>Schoharie Area Long-Term (SALT) Relief Organization</i>	2013 – 2014
Past Chair, Masonry Committee <i>Structural Engineers Association of New York (SEAoNY)</i>	2002

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