



Forensic Engineering  
and Loss Consulting

LER A

# LERA

Consulting Structural Engineers

[www.lera.com](http://www.lera.com) | [info@lera.com](mailto:info@lera.com)

## NEW YORK

40 Wall Street, 23<sup>rd</sup> Floor  
New York, NY 10005  
Tel: 212 750 9000  
Fax: 212 750 9002

## MUMBAI

The Ruby, North Wing, 23<sup>rd</sup> Floor  
29, Senapati Bapat Marg, Dadar (W)  
Mumbai 400 028  
Maharashtra INDIA  
Tel: +91 6780 9000

## SHANGHAI

Suite 2102, Jingan China Tower  
1701 West Beijing Road  
Shanghai 200040 CHINA  
Tel: +86 21 6136 3996  
Fax: +86 21 6136 3995

## HONG KONG

Suite 1101, 11/F  
135 Bonham Strand Trade Centre  
135 Bonham Strand  
Sheung Wan HONG KONG  
Tel: +852 3705 5311

## SEOUL

Suite 701, 25 Seongsuil-ro 4-gil  
Seongdong-gu  
Seoul, Republic of Korea  
Tel: +82 2 461 4553  
Fax: +82 2 461 4555

## MARKET SECTORS



Mixed-Use Towers  
& Office Buildings



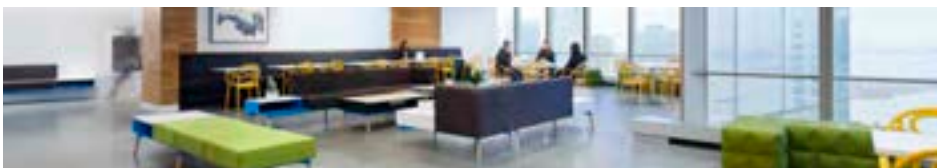
Museums &  
Cultural Facilities



Academic &  
Healthcare Facilities



Residential & Hotel  
Developments



Renovations &  
Interior Spaces



Convention Centers  
& Public Facilities



Transportation &  
Sports Facilities



Forensic Engineering &  
Loss Consulting



Bridges &  
Special Structures

# FORENSIC ENGINEERING AND LOSS CONSULTING

Recognized as a leader in the field of structural engineering, LERA is called upon by attorneys, insurance companies, and their clients to investigate problems that arise on construction projects. Drawing upon our 90-year history of successful and innovative designs for a wide range of complex projects, we seek out the root causes of structural defects, performance issues, and collapses, and provide sound and reliable advice to our clients. Our services include investigations, litigation support services, expert testimony, risk assessments, design of remedial measures for damaged or poorly performing structures, and development of graphic tools that help legal teams explain things to triers-of-fact.

## What Sets LERA Apart

### EXPERIENCE

LERA is currently the lead structural engineer for more than \$12 billion and 50 million square feet of construction, worldwide. Our forensic engineers are experienced members of construction project teams, who understand the complexities of the design and construction processes and bring this experience to bear in the firm's forensic work.

### CLARITY

Problems that arise on construction projects can be complicated. LERA is committed to providing our clients with clear, reliable advice, so they understand the technical and operational issues underlying structural problems and can make sensible decisions in preparing for and navigating disputes. LERA frequently develops three-dimensional models and animations to help clients and triers-of-fact understand complex issues.

### CREDIBILITY

The breadth and depth of LERA's experience with complex, challenging projects worldwide, combined with our reputation for design excellence, gives our forensic engineers a unique level of credibility in their evaluations of construction projects.

## Structural Engineering Services

### PROPERTY LOSS CONSULTING

- Scope of Damage Determination
- Root Cause Analysis
- Structural Failure / Inadequate Performance Evaluation
- Repair / Replacement Designs and Recommendations
- Building Code Evaluation

### RISK ASSESSMENT

- Man-Made and Natural Hazard Vulnerability Assessment
- Loss of Function and Performance-Based Design
- Mitigation Strategies

### LITIGATION SUPPORT SERVICES

- Expert Testimony and Report Writing
- Construction / Design Defect Claim Evaluation
- Contractor Change Claim Evaluation
- Structural Analysis and Modeling
- Advanced Graphics and Building Information Modeling (BIM)
- Technical Document Review and Indexing
- Standard of Care Evaluation

### POST DISASTER RESPONSE

- Support for Agencies and Responders
- Condition Assessments

# FIRM OVERVIEW

## Firm Profile

LERA Consulting Structural Engineers is a W/MBE structural engineering firm providing services to architects, owners, contractors and developers. Since our founding in 1923, we have designed numerous landmark projects across the world and have established a strong reputation for design and technical excellence. Today, LERA's talented professionals continue the tradition of creating innovative yet constructible and economical structural designs.

Our portfolio includes a wide variety of building types of every size and level of complexity. We have accomplished unique and award-winning designs for new buildings, as well as renovations to existing and historic structures. Our services include complete structural designs, feasibility studies, peer reviews, value engineering, computational design, blast analysis and design, forensic consulting, façade inspections and special inspections.

Headquartered in New York City, LERA also operates offices in Mumbai, Shanghai, Hong Kong and Seoul.



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# LEERA

**CURRICULA VITAE**



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

Partner

LERA Consulting Structural Engineers, RLLP  
 40 Wall Street, 23rd Floor  
 New York, NY 10005-1339  
 (646) 981-4341  
[benjamin.cornelius@lera.com](mailto:benjamin.cornelius@lera.com)

**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**

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

*National Council of Examiners for Engineering and Surveying (NCEES)*

**Education**

<b>Bachelor of Architectural Engineering, The Pennsylvania State University</b>	<b>1994</b>
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, “ <b>Chapter 6: Forensic Engineering Reports</b> ”	2018
<i>Guidelines for Failure Investigation: Second Edition</i> , American Society of Civil Engineers, Forensic Engineering Division, Committee on Forensic Investigation	
Author, “ <b>Five Key Steps Project Teams Can Take to Manage Risk in Property Line Construction Projects</b> ”	2016
<i>The Critical Path</i> , Defense Research Institute, Construction Law Committee Newsletter, Volume 20, Issue 4	

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

## Presentations

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

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

## Project Honors and Awards

<b>MassArt Design and Media Center</b> , 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
<b>The Broad</b> , 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 <sup>th</sup> 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
<b>Las Vegas Springs Preserve Visitor Center</b> , 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

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

## Professional Affiliations

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

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**DANIEL A. SESIL, P.E., C.E., S.E.**

Partner

LERA Consulting Structural Engineers, R.L.L.P.  
 40 Wall Street, 23rd Floor  
 New York, NY 10005-1339  
 212-750-9000  
[daniel.sesil@lera.com](mailto:daniel.sesil@lera.com)

**Profile**

Daniel Sesil, Partner at LERA Consulting Structural Engineers, has been with the firm since 1983. His extensive expertise lives in special design projects that answer to function and innovation. He specializes in long span, column-free spaces, high-rise buildings, creative solutions and research initiatives.

Mr. Sesil is currently Partner-in-Charge of a wide range of projects, including the design of the Lucas Museum of Narrative Arts, the Rubenstein Forum at the University of Chicago, a new hospital building at Coney Island Hospital in New York, the New Embassy Compound (NEC) in Ankara, Turkey and the New Consular Compound (NCC) in Nogales, Mexico. Projects of his that recently completed construction include the Kimmel Pavilion at New York University Langone Medical Center in New York, a new building for SUNY's Downstate Medical Center and a private residence designed using a complex geometric system and FRP paneled roof.

Mr. Sesil has led the design of several of LERA's landmark projects, including the William J. Clinton Presidential Center in Little Rock, AR, the Newseum and Freedom Forum in Washington, DC, the Rock and Roll Hall of Fame in Cleveland, the Miho Bridge in Japan, the National Museum of American Jewish History in Philadelphia, the Roy and Diana Vagelos Education Center at Columbia University Medical Center in New York and the Prada Soho boutique in New York. He also leads the structural design efforts for Global Building Modules, a steel framed modular system inspired by shipping containers, the scale and design of which allows for efficient transportation and offers a potential solution to high-cost housing.

A published author and frequent speaker at design and engineering events, Mr. Sesil serves on the U.S. Department of State's Bureau of Overseas Building Operations (OBO) Industry Advisory Group, and is also a member of the Marquette University College of Engineering Thought Leaders Council. For his actions following the 1993 World Trade Center bombing, he received the Medal of Valor from The Port Authority of New York and New Jersey.

**Professional Experience****LERA Consulting Structural Engineers (LERA)****1983 – Present**

Partner	1995 – Present
Associate	1988 – 1995
Design Engineer	1983 – 1988

*Project Experience, Design*

- *United Nations Consolidated Building, New York, NY.* Partner-in-Charge for the design of a new 37-story, 950,000-sf (88,000-sm) office building.
- *BDNI Center, Jakarta, Indonesia.* Partner-in-Charge for the design concept of two office towers. Tower A is 62-stories and Tower B is 45-stories, totaling approximately 2.1 million sf (195,000 sm) with 1.1-million sf (102,000 sm) of below-grade parking levels.
- *Shun Hing Square DiWang Commercial Complex, Shenzhen, China.* Assisted in the structural design of this 70-story (384-m), 3 million-sf (280,000-sm) office tower with 900 parking spaces below grade. LERA provided peer reviews, wind engineering and alternative designs.

**LERA**

- *Parkhaven Tower, Rotterdam, The Netherlands.* Partner-in-Charge for the structural design of this high-rise office tower building concept that incorporates several sustainable features, including a double façade that reacts to changes in season and uses clear glass to optimize incoming daylight. The outer layer of the double façade diminishes wind pressure to such an extent that windows can remain open 80% of the year, maximizing natural ventilation and saving energy.
- *Roy and Diana Vagelos Education Center, Columbia University Medical Center, New York, NY.* Partner-in-Charge for the design of this new state of the art medical center.
- *International Hospital, Shanghai, China.* Partner-in-Charge for the design of this new hospital.
- *School of Public Health, SUNY Downstate, Brooklyn, NY.* Partner-in-Charge for the design of this new 115,000-sf (10,700-m) facility that serves as Brooklyn's only academic medical center.
- *Massachusetts School of Art (MassArt) Design and Media Center, Boston, MA.* Partner-in-Charge 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.
- *Broad Art Museum, Los Angeles, CA.* Partner-in-Charge for the design of this 3-story, 80,000-sf (7,400-sm) art museum situated above a parking facility.
- *Private Residence, Long Island, NY.* Partner-in-Charge for the design of this private residential house.
- *NYU Medical Center, Kimmel Pavilion, New York, NY.* Partner-in-Charge for the design of this new academic and healthcare facility creating an 830,000-sf (77,110-sm) state-of-the-art, integrated environment for inpatient and procedure-based care for a New York area university hospital.
- *Kew Gardens Hills Library, Queens, NY.* Partner-in-Charge for the renovation of this library. The renovation will add 3,000 sf to the original library built in 1966, yielding a new total of 10,500 sf.
- *Staten Island Courthouse, New York, NY.* Partner-in-Charge for the design of a 184,000-sf (17,100-sm) new courthouse and memorial plaza. The project was designed to achieve a LEED Gold rating.
- *Novartis East Village Expansion, East Hanover, NJ.* Partner-in-Charge for the design of a new 5-story office building that totaling 185,000 sf (17,187 sm).
- *Agricultural Science Center, SUNY, Cobleskill, NY.* Partner-in-Charge for the design of the new Agricultural Science and Technology Center containing a gross area of approximately 86,000 sf (8,000 sm). The facility was designed to meet LEED Silver criteria.
- *NYU Medical Center Tisch Hospital Elevator Tower, New York, NY.* Partner-in-Charge for the addition of a new tower to the existing Tisch Hospital. The Hospital needed to remain fully operational during the construction of the 38,000-sf Elevator tower.
- *Utah Museum of Natural History, Salt Lake City, UT.* Partner-in-Charge for the design of this new 170,000-gsf (16,000-gsm) museum housing gallery space, classrooms, research laboratories and a separate parking structure designed to accommodate 200 cars.
- *NYU Medical Center, Energy Building, New York, NY.* Partner-in-Charge for the design a new building adjacent to the existing Tisch Hospital. This project was designed to accommodate updated flood mitigation measures, and was built on a fast-tracked schedule.
- *NYU Emergency Department Expansion, New York, NY.* Partner-in-Charge for 3,200-sf addition to the existing building and renovation of 19,000 sf of existing space.
- *P.S. 216 Edible Schoolyard, Brooklyn, NY.* Partner-in-Charge for the design of a new elementary school that consists of a free-standing, single-story building that contains a working greenhouse, an organic farm and a culinary classroom with a full kitchen.
- *Jacob K. Javits Convention Center Expansion, New York, NY.* Partner-in-Charge for the design of a proposed expansion of the existing convention center. The facility would be expanded in size from 1.9 million sf to 6 million sf.

- *William J. Clinton Presidential Center, Little Rock, AR.* Partner-in-Charge for the design of 165,000 sf (15,000 sm) that houses archive and exhibit spaces, as well as the Clinton Foundation Headquarters. The site includes the University of Arkansas Clinton School of Public Service and a 28-acre recreational park.
- *New York Historical Society, New York, NY.* Partner-in-Charge for the renovation of this historically significant building in New York City's Upper West Side.
- *Boulder City Operations Office, Boulder City, NV.* Partner-in-Charge for the 45,000-sf office building, which is home to approximately 170 employees of the Bureau of Reclamation's Lower Colorado Region. The project was built on a fast-tracked schedule.
- *National Museum of American Jewish History, Philadelphia, PA.* Partner-in-Charge for the design of this 100,000-sf (9,300-sm) museum.
- *Gateway Center, Westchester Community College, Valhalla, NY.* Partner-in-Charge for the design of three new academic buildings totaling 70,000-sf (6,500-sm). The Gateway's unique structural design consists of architecturally exposed stackable steel "boxes," which were prefabricated and bolted together on site. A steel bridge crosses the Gateway and links the three campus buildings.
- *47 East 91st Street, New York, NY.* Partner-in-Charge for the design of a 9-story condominium tower built over an existing and continuously operating one-story bank branch.
- *Public Farm One, Queens, NY.* Partner-in-Charge for the design of this interactive, working farm sited at the P.S.1 Contemporary Art Center.
- *Newseum and Freedom Forum, Washington, DC.* Partner-in-Charge for this 650,000-sf (60,000-sm) building that contains galleries, a 500 seat auditorium, technologically advanced black box broadcasting facilities and office and retail space in a 7-story building envelope.
- *Prada Soho, New York, NY.* Partner-in-Charge for the renovation of the former Guggenheim Soho Museum into an upscale retail establishment.
- *School of Architecture, Princeton University, Princeton, NJ.* Partner-in-Charge for the renovation and addition to this academic facility.
- *Shelter Island Residence, NY.* Partner-in-Charge for the design of this 4,500-sf (420-sm) beachfront home, which is composed of a timber and glass box balanced on a concrete base with cantilevers of up to 13 feet on four sides and details inspired by classical Japanese architecture.
- *Community College of Southern Nevada (CCSN), Science Center, Las Vegas, NV.* Partner-in-Charge for the design of a 75,000-sf facility containing 16 state-of-the-art teaching laboratories, 17 lecture classrooms and a high-tech distance education studio.
- *Schein Residence, Woodstock, NY.* Partner-in-Charge for the design a 4,500-sf (420-sm) private residence in the scenic overlay district in the town of Woodstock.
- *Learning Spring Elementary School, New York, NY.* Partner-in-Charge for the design of an 8-story learning center for autistic children in grades K-8. In addition to classrooms and administrative offices, the 30,000-sf (2,800-sm) facility contains a gymnasium, a library, a cafeteria, an acoustically isolated music room and a therapy room.
- *Satellite D Expansion, McCarran Airport, Las Vegas, NV.* Partner-in-Charge for the addition of a 144,000-sf (13,400-sm), 2-story wing to McCarran Airport's existing Satellite D Terminal.
- *New York Hall of Science Addition, Queens, NY.* Partner-in-Charge for the design of a 70,000-sf (6,500-sm) addition expanding existing space for permanent and temporary exhibits, exhibition preparation and shop facilities.
- *Gagosian Gallery Renovation, New York, NY.* Partner-in-Charge for the conversion of an existing warehouse into an art gallery.
- *Richard Serra sculpture at Gagosian Gallery, New York, NY.* Partner-in-Charge for the structural design of this sculpture.

- *Miho Museum Bridge, Kyoto, Japan.* Partner-in-Charge for the design of the museum bridge and the museum building. The building, 80 percent of which is underground, is nestled within a 247-acre mountainous nature preserve.
- *Princeton Friend Center for Engineering, Princeton, NJ.* Partner-in-Charge for the structural design of this 3-story, 65,000-sf building that includes classrooms, the engineering library, faculty offices, computer clusters and a lecture hall.
- *Colin Powell Hall, City College, New York, NY.* Partner-in-Charge for the structural design of this academic facility.
- *Tisch Institute of Performing Arts, NYU, New York, NY.* Partner-in-Charge for the structural design of this academic facility.
- *Alfred Lerner Hall, Columbia University, Ramps and Glass Wall (Contractor's Engineer), New York, NY.* Partner-in-Charge for the structural design of this new academic building.
- *Reno/Tahoe International Airport Canopy, Reno, NV.* Partner-in-Charge for the structural design of the addition of a new canopy that surrounds the existing airport.
- *Richard Serra sculpture at Matthew Marks Studio, New York, NY.* Partner-in-Charge for the structural design of this sculpture.
- *Richard Serra sculpture at Princeton University, Princeton, NJ.* Partner-in-Charge for the structural design of this sculpture.
- *Richard Serra sculpture, Bilbao, Spain.* Partner-in-Charge for the structural design of this sculpture.
- *Beverly Pepper's "Sentinels," New York, NY.* Partner-in-Charge for the structural design of this sculpture.
- *Federal Reserve Bank, Richmond, VA.* Partner-in-Charge for the structural design of this 26-story office building that consists of 551,000 sf (52,000 sm) and includes underground parking for 500 cars.
- *West Street Condominiums, New York, NY.* Partner-in-Charge for the structural design of this residential building.
- *El Equis, Panama.* Partner-in-Charge for the structural design of this residential building.
- *Federal Facility Security Enhancement, Bldgs. 1 & 2.* Partner-in-Charge for the structural design of these office buildings.
- *Industrial and Commercial Bank of China, Shanghai, China.* Led the structural design of this 27-story, 376,000-sf (35,000-sm) office building for the Shanghai Industrial and Commercial Bank of China.
- *St. Regis Hotel, Shanghai, China.* Led the structural design of a 37-story, 376,000-sf (50,000-sm) hotel located in the Pudong region of Shanghai for the Hongta Corporation.
- *Rock 'N' Roll Hall of Fame and Museum, Cleveland, OH.* Led the structural design of this 143,000-sf (13,000-sm) facility that combines geometric forms and cantilevered spaces.
- *Conrad Centennial Hotel & Retail, Singapore.* Led the structural design of the 41-story hotel that includes 509 rooms, the Millenia Walk and a 3-story upscale retail mall containing 323,000 sf (30,000 sm) of rentable space with parking below.
- *Meyerson Symphony Center, Dallas, TX.* Project Manager for the structural design of this building, the home for the Dallas Symphony Orchestra. It contains a 2,200-seat performance hall, an administration wing, entertainment rooms, ticket booths, a restaurant and a 100-car parking level.
- *U.S. Embassy Office Building, Caracas, Venezuela.* Project Manager for the structural design of this 100,000-sf, (9,000-sm) 5-story building recessed into the bedrock of the Andean foothills.
- *Borofsky's "Hammering Man," Seattle, WA.* Project Manager for the structural design of this sculpture.
- *Crystal Cathedral, Garden Grove, CA.* Project Manager for the structural design of this religious chapel.

- *Puerta de Europa, Madrid, Spain.* Assisted in the structural design of these two leaning towers measuring at 372.5 ft (114 m) tall and 27 stories high. The tower floors total 13,000 sf (1,200 sm).
- *Hawá Center, Saudi Arabia.* Assisted in the structural design of this retail development.
- *International Trade Center, Barcelona, Spain.* Assisted in the structural design of this office building.

#### *Project Experience, Investigations*

- *High-rise Tower Investigation.* Expert witness for investigation of a concrete tower in North America.
- *Blast Design.* Investigated the adequacy of blast designs of a 90,000-sf reinforced concrete structure in Central Asia.
- *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.
- *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.

#### *Project Experience, Peer Review*

- *World Trade Center PATH and Transportation Hub, New York, NY.* Member of the Hub Working Group that reviewed and suggested time- and cost-saving alternatives for the new World Trade Center PATH and Transportation Hub.
- *MTA 1 Line, World Trade Center, New York, NY.* Member of the 1 Line Working Group that reviewed and suggested time- and cost-saving alternatives for the support and construction of the MTA 1 Line passing through the World Trade Center.
- *Pittsburgh Convention Center, Pittsburgh, PA.* Assisted in the peer review of the expansion of the convention center.
- *Federal Reserve Bank (Study), Richmond, VA.* Assisted in the study and peer review of this 551,000-sf office building.
- *625 King's Road, Hong Kong.* Assisted in the peer review of a 26-story office building.
- *Dubai Towers, Dubai, UAE.* Assisted in the peer review of four high-rise towers, the tallest being 400 meters.

## Teaching Experience

### **Cornell University**

Guest Lecturer, College of Architecture, Art and Planning

**Spring 2016**

### **Columbia University**

Adjunct Assistant Professor, School of Architecture

**2001 – 2010**

## Professional Licenses and Designations

**Licensed Professional Engineer – New York. Licensed or eligible in all 50 states.**

1986 – Present

**Licensed Civil Engineer – California and other states.**

2000 – Present

**Licensed Structural Engineer – Illinois and other states.**

2000 – Present

## Education

**Master of Civil Engineering, Purdue University**

**1983**

**Bachelor of Civil Engineering, Marquette University**

**1981**

**LERA**

## Publications

- Co-Author, **"Columbia Medical Center's Vertical Campus"** April 2016  
*STRUCTURE Magazine*
- Co-Author, **"Securing the Vibrant Future of our Cities: Decision Making Principles for Aspirational Projects"** October 2015  
*Council on Tall Buildings and Urban Habitats, Global Interchanges Resurgence of the Skyscraper City*
- Co-Author, **"A New Monument on America's Main Street"** February 2010  
*Modern Steel Construction*
- Co-Author, **"Newsmaker"** April 2009  
*Civil Engineering Magazine*
- Co-Author, **"Commanding Presence"** March 2005  
*Civil Engineering Magazine*
- Co-Author, **"Considerations for Retrofit of Existing Steel Buildings for Resisting Blast and Progressive Collapse"** 2003  
*Blast Design Symposium, AISC/SINY, New York, NY*
- Co-Author, **"Rising High"** November/December 2000  
*Urban Land Magazine*
- Co-Author, **"The Miho Museum Bridge: A Post-Tensioned Steel Space-Frame"** September 1998  
*World Steel Bridge Symposium*
- Co-Author, **"The Miho Museum Bridge Shiga-raki, Japan: A Bridge Between Function and Beauty"** May 1998  
*STRUCTURE Magazine*
- Co-Author, **"Material Selection in the Design of Innovative Structures"** Winter 1998  
*Structural Engineering World Congress*
- Co-Author, **"The Museum Bridge for Shinji Shumeikai: a Post-Tensioned Steel Space-Frame"** December 1996  
*Advances in Steel Structures (ICASS '96), Volume I, pp. 565 – 570*

## Presentations

- Presenter, **"Securing the Vibrant Future of our Cities: Decision Making Principles for Aspirational Projects"** October 2015  
*Council on Tall Buildings and Urban Habitats, International Conference, New York, NY*
- Workshop Presenter, **"Broad-side"** April 2014  
*Facades+ Symposium, New York, NY*
- Co-Presenter, **"William J. Clinton Presidential Center and Park: 'Bridge to the 21st Century'"** April 2006  
*ASCE Metropolitan Section Structures Group Spring Seminar*
- Presenter, **"Innovations in the Design of the Miho Museum Bridge"** May 2000  
*ASCE Metropolitan Section Structures Group Spring Seminar*
- Presenter, **"Rock and Roll Hall of Fame Museum, Cleveland Ohio"** April 1996  
*ASCE Metropolitan Section Structures Group Spring Seminar*

## Project Honors and Awards

**MassArt Design and Media Center**, Boston, MA

American Architecture Award The Chicago Athenaeum: Museum of Architecture and Design and The European Centre for Architecture Art Design and Urban Studies	2017
Design Award of Merit Society of American Registered Architects New York (SARA NY)	2017
Design Award – Education Facilities Design Boston Society of Architects (BSA)	2016
<b>The Broad</b> , Los Angeles, CA	
Outstanding Project (Veil) National Council of Structural Engineers Association (NCSEA) Excellence in Structural Engineering Awards	2017
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 Los Angeles Business Council (LABC) 46 <sup>th</sup> Annual Los Angeles Architectural Awards	2016
Design Award of Honor American Institute of Architects New York (AIA NY)	2016
Finalist – Architecture + Engineering Architizer A+ Awards	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
<b>Novartis</b> , East Hanover, NJ	
Project of the Year <i>Engineering News-Record (ENR)</i>	2015
<b>Roy and Diana Vagelos Education Center, Columbia University Medical Center</b> , New York, NY	
Diamond Award – Structural Systems American Council of Engineering Companies New York (ACEC NY)	2018
Best in Competition & Architecture Honor Award American Institute of Architects New York (AIA NY)	2017
Second Place: Mid-Rise Buildings American Concrete Institute (ACI) Excellence in Concrete Construction Awards	2017
Visionary Architecture Award Society of American Registered Architects New York (SARA NY)	2017
MAStErworks Award – Best New Building The Municipal Art Society of New York (MASNYC)	2017
Award of Merit – Higher Education/Research <i>Engineering News-Record (ENR)</i> New York Best Projects	2017
Award of Merit – Buildings Category Post-Tensioning Institute (PTI) Awards	2017
Finalist, Excellence in Institutional Development Urban Land Institute (ULI) New York	2017

Best of Design Award – Façade <i>Architect's Newspaper (AN) Best of Design Awards</i>	2017
Finalist, Architecture + Engineering & Unbuilt Institutional Architizer A+ Awards	2016
Excellence in Structural Engineering Award Structural Engineers Association of New York (SEAoNY)	2015
Excellence in Structural Engineering Award National Council of Structural Engineers Association (NCSEA)	2015
Annual Award – 53rd Annual Roger H. Corbetta Awards Concrete Industry Board (CIB)	2014
Award for Innovative Design American Concrete Institute, Strategic Development Council	2014
<b>PS 216 Edible Schoolyard</b> , Brooklyn, NY MAsterworks Award – Best Green Design Initiative The Municipal Art Society of New York (MASNYC)	2014
<b>Natural History Museum of Utah</b> , Salt Lake City, UT Excellence in Architecture for a New Building Society for College and University Planning/American Institute Architects (AIA) Committee on Architecture for Education	2014
<b>Calder Foundation</b> , New York, NY A+ Cultural Award Architizer A+ Awards	2015
<b>Westchester Community College, Gateway Building</b> , Valhalla, NY Excellence in Structural Engineering Award Structural Engineers Association of New York (SEAoNY)	2011
American Architecture Award The European Centre for Architecture Art Design and Urban Studies and The Chicago Athenaeum	2011
Architecture Design Award of Merit American Institute of Architects New York (AIA NY)	2011
National Award American Institute of Steel Construction (AISC) Innovative Design in Engineering and Architecture with Structural Steel (IDEAS <sup>2</sup> ) Awards	2011
National Design Award Society of American Registered Architects (SARA)	2011
High Honor Award American Institute of Architects (AIA) Westchester/Hudson Valley	2011
Merit Award American Institute of Architects New York (AIA NY)	2011
Metalmag Architectural Award, Wall Panel & Metal Building Categories Umicore Building Projects	2011
Best of 2010 Awards (Higher Education/Research) New York Construction	2011
<b>Public Farm One</b> , Queens, NY	

Platinum Award for Engineering Excellence American Council of Engineering Companies New York (ACEC NY)	2009
Best of 2008 Awards (Park/Landscape) New York Construction	2008
Merit Award Structural Engineers Association of New York (SEAoNY)	2008
<b>Newseum and Freedom Forum, Washington, DC</b>	
Platinum Award for Engineering Excellence American Council of Engineering Companies New York (ACEC NY)	2009
Design Award of Merit American Institute of Architects New York (AIA NY)	2009
National Design Award Society of American Registered Architects	2009
Award of Merit Society of American Registered Architects/New York Council	2009
Craftsmanship Award Winner Washington Building Congress	2008
Best of 2008 Award, Cultural Project of the Year Mid-Atlantic Construction News	2008
Merit Award Structural Engineers Association of New York (SEAoNY)	2008
<b>Las Vegas Springs Preserve Visitor Center, Las Vegas, NV</b>	
Platinum Award for Engineering Excellence American Council of Engineering Companies New York (ACEC NY)	2008
Award of Merit American Institute of Steel Construction (AISC) Innovative Design in Engineering and Architecture with Structural Steel (IDEAS <sup>2</sup> ) Awards	2008
Citation Award American Institute of Architects (AIA) Nevada	2007
Urban Design Award Mayor of the City of Las Vegas	2007
Design Award of Honor American Institute of Architects (AIA) Nevada	2003
<b>McCarran International Airport Satellite D Expansion &amp; Control Tower, Las Vegas, NV</b>	
Gold Award for Engineering Excellence American Council of Engineering Companies New York (ACEC NY)	2007
Excellence in Design Award American Council of Engineering Companies New York (ACEC NY)	2005
<b>William J. Clinton Presidential Library and Museum, Little Rock, AR</b>	
Architecture Design Award of Honor American Institute of Architects (AIA) National	2006
Engineering Awards of Excellence American Institute of Steel Construction (AISC)	2006
Award for Engineering Excellence American Council of Engineering Companies New York (ACEC NY)	2006

Honorable Mention American Institute of Architects (AIA)/COTE Top Ten Green Projects	2007
Library Building Award American Institute of Architects (AIA)/ALA	2007
Honor Award American Institute of Architects New York (AIA NY)	2005
<b>Prada Soho</b> , New York, NY Award of Merit <i>New York Construction News</i>	2002
<b>Miho Museum Bridge</b> , Shiga-raki, Japan Outstanding Structure Award International Association for Bridge and Structural Engineering (IABSE)	2002
Most Innovative Structure Award Structural Engineers Association of Illinois (SEAOI)	1999
Diamond Award for Excellence in Bridge Engineering New York Association of Consulting Engineers (NYACE)	1999
Engineering Excellence Honor Award American Consulting Engineers Council (ACEC)	1999
HIROBA Architectural Award Kinki Federation of Architect & Building Engineers	1998
Award of Excellence 15 <sup>th</sup> International Association of Lighting Designers (IALD) Design Competition	1998
<b>Rock and Roll Hall of Fame Museum</b> , Cleveland, OH National Engineering Award of Excellence American Institute of Steel Construction (AISC)	1997
Innovative Design and Excellence in Architecture with Steel American Institute of Steel Construction (AISC)	1997
Merit Award The Concrete Industry Board (CIB)	1997
<b>Puerta de Europa</b> , Madrid, Spain First Prize Award for Engineering Excellence New York Association of Consulting Engineers (NYACE)	1996
<b>Meyerson Symphony Center</b> , Dallas, TX Award of Merit for Out-of-Area Project New York Concrete Industry Board	1997
Honor Award American Institute of Architects (AIA)	1991
Dallas Urban Design Award City of Dallas	1990
Commendation for Excellence in Construction Associated Builders & Contractors, North Texas Chapter	1990

## Professional Honors and Awards

Member, College of Engineering Thought Leaders Council

2015 – Present

**LER**A

Marquette University

**Member, Industry Advisory Group**

2014 – Present

U.S. Department of State, Bureau of Overseas Building Operations (OBO)

**The World Trade Center Medal for Individual Acts of Valor**

1993

The Port Authority of New York and New Jersey (PANYNJ)

## Professional Affiliations

**Active Member**

Structural Engineers Association of Illinois (SEAOIL)

**Active Member**

Structural Engineers Association of New York (SEAoNY)

**Active Member**

ASM International

**Active Member**

American Welding Society (AWS)

**Active Member**

American Concrete Institute (ACI)

**Active Member**

American Society of Civil Engineers (ASCE)

**Active Member**

New York Academy of Sciences (NYAS)

**Active Member**

American Society for Testing and Materials (ASTM)

**Active Member**

Structural Engineering Certification Board (SECB)

Updated 14 February 2019

**WILLIAM J. FASCHAN, P.E., S.E., F.ASCE, M. Eng.**

Partner

LERA Consulting Structural Engineers, RLLP  
 40 Wall Street, 23rd Floor  
 New York, NY 10005-1339  
 212-750-9000  
[william.faschan@lera.com](mailto:william.faschan@lera.com)

**Profile**

With LERA Consulting Structural Engineers since 1978, rising to Partner in 1987, Mr. Faschan has over 40 years of experience as a structural engineer and has led the structural design on a wide range of commercial, cultural, and municipal projects. As Partner-in-Charge, Mr. Faschan has managed and overseen LERA's design efforts on 4 World Trade Center in New York City; the Museum of Islamic Art in Doha, Qatar; the Capitol Crossing Platform in Washington, D.C.; the 68-story Bitexco Financial Tower in Ho Chi Minh City, Vietnam; the Lodha World One Tower in Mumbai, India; the new Academic Building I at CUNY John Jay College of Criminal Justice in New York City; and many other hotel, office, and mixed-use developments in North America, Asia, the Middle East, and Europe. Mr. Faschan has led numerous projects that have included pedestrian bridges and long-span construction requiring special construction sequences. He possesses extensive knowledge and expertise regarding the design of structures in both concrete and steel.

Mr. Faschan has ample experience as an expert witness, having consulted on and conducted a number of investigations involving tall buildings, residential structures, sports and entertainment structures, and transportation facilities.

**Professional Experience****LERA Consulting Structural Engineers****1978 – Present**

Partner

1987 – Present

*Project Experience, Testimony*

- *Airport Terminal & Train Station Roof Structure.* Provided testimony at mediation for an evaluation of the roof structure of an airport terminal in Asia, involving prefabricated 100-ft square structures transported and hoisted into position. The transit hub is located beneath the main airport terminal, and contains the Airport Express, which provides a rapid connection between the airport and the Central Business District.
- *Subway Line Construction Delay.* Provided testimony at mediation for a dispute between two parties regarding the delay in the re-construction of a subway line through the site of a major commercial development.
- *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.
- *Stadium Design Defects.* Provided testimony at mediation for an investigation into design defects and delay to the construction of a soccer stadium in Europe.
- *Out-of-Tolerance Construction.* Provided testimony at arbitration for an investigation into the out-of-tolerance construction of the floors for a skyscraper in North America.
- *Steel Fabrication.* Provided testimony at jury trial and appeal trial regarding claims of delay in steel fabrication, and conducted an investigation of the truss erection and erection bracing, for a hotel building in North America.
- *Railroad Bridge in New York.* Provided testimony at mediation concerning the construction process and methodology of a railroad bridge.
- *Convention Center.* Provided testimony at mediation for an investigation into numerous claims brought forth by a subcontractor regarding a convention center in North America.

**LERA**

#### Project Experience, Investigations

- *NIST Investigation of the World Trade Center Collapse*. Re-created the base building design models and supported the modeling of the collapse.
- *World Trade Center Repairs After 1993 Bombing*. Investigated and documented the damage and designed the repairs of the structure.
- *City Center*. Investigated the as-built structural deficiencies in the partially built structural frame of this hotel and condominium tower in North America.
- *David L. Lawrence Convention Center*. Investigated the reasons for the collapse during construction of a large-scale steel frame for anchoring a primary roof cable for this convention center in Pennsylvania.
- *Log Framed House*. Investigated reasons for cracking in the logs of an as-built home.
- *Stadium Roof*. Investigated the reasons for premature wear in the roof sheathing and failure of sheathing attachments for a sports stadium.
- *High-Rise Office Building*. Investigated damage to the structural framing from a construction fire and recommended remedial work for a high-rise office building in Southeast Asia.
- *Arena Roof*. Investigated the reasons for bolt failures, provided monitoring, analysis and recommendations for remediation for the roof of an arena in New Jersey.
- *High-Rise Condominium*. Investigated the adequacy of design of three existing 40-story condominium towers in Florida and designed repairs where required.

#### Project Experience, Peer Review

- *Emirates Headquarters, Peer Review, Dubai, UAE*. Partner-in-Charge for the peer review of two 60-story towers, one hotel and one office.
- *1 World Trade Center, Freedom Tower, New York, NY*. Partner-in-Charge for the peer review of this 104-story, 1,776-ft office tower.
- *2 World Trade Center, New York, NY*. Partner-in-Charge for the peer review of this 80-story, 1,340-ft office tower.
- *3 World Trade Center, New York, NY*. Partner-in-Charge for the peer review of this 80-story, 1,170-ft office tower.
- *7 World Trade Center, New York, NY*. Partner-in-Charge for the peer review and value engineering of this 50-story, 2 million-sf office tower housing a Con Edison substation. LERA's value engineering efforts included the elimination of a hat truss that resulted in total savings of \$5 million.
- *Confidential Government Office Building, Northern Virginia*. Partner-in-Charge for the peer review on behalf of Contractor of the constructability and economy of the structure for a 2.5 million-sf office complex including a multi-level long span pedestrian bridge and atrium roof.
- *Large-Scale Construction Platform, New York, NY*. Partner-in-Charge for the peer review of a 120,000-sf building platform constructed over rail lines.
- *David L. Lawrence Convention Center, Pittsburgh, PA*. Partner-in-Charge for the peer review of a 330,000-sf LEED Gold convention center containing 236,000 sf of column-free space.
- *Arthur Ashe Stadium, Queens, NY*. Partner-in-Charge for the peer review of construction of the retractable roof for this national tennis stadium. Off-site manufactured steel beams for the roof were brought to the site and placed on top of the stadium using jumbo cranes.
- *Louis Armstrong Stadium, Queens, NY*. Partner-in-Charge for the peer review of this new 14,000-seat national tennis stadium featuring a retractable roof, constructed for the 2018 US Open.
- *15 Hudson Yards, New York, NY*. Partner-in-Charge for the peer review of this new 800,000-sf residential tower, a central component of Manhattan's new Hudson Yards district.
- *1 Manhattan West, New York, NY*. Partner-in-Charge for the peer review of this 3.5 million-sf commercial development consisting two high-rise office towers, one 67 stories and one 63 stories.
- *AOL Time Warner Centre, New York, NY*. Partner-in-Charge for the peer review and value engineering of this 2.7 million-sf mixed-use complex consisting of two 52-story hotel and residential towers connected by an 8-story podium. LERA's value engineering efforts included a column redesign that resulted in total savings of \$10 million.
- *Lot 171, Kuala Lumpur City Centre, Malaysia*. Partner-in-Charge for the peer review and alternative design of a 58-story mixed-use tower.

- *The Tequesta and Courvoisier Courts, Miami, FL.* Partner-in-Charge for the peer review and redesign of a 40-story residential project. LERA's review and redesign were completed on a fast-track schedule in order to maintain the project's original schedule.
- *Conrad Hilton Hotel, Pacific Place, Hong Kong.* Partner-in-Charge for the peer review and ongoing collaboration on the design of a 5 million-sf mixed-use development consisting of four 60-story towers.

#### *Project Experience, Design*

- *Kuala Lumpur Development, Kuala Lumpur, Malaysia.* Partner-in-Charge for a confidential mixed-use development, including a retail podium with subway access and a 3-story museum cantilevered 190 ft over a 4-lane city street. Complex multi-variable soil-structure interaction studies were performed to establish the foundation types and construction methodologies that would meet the strict limitations of the adjacent underground subway station.
- *Kuala Lumpur Development, Kuala Lumpur, Malaysia.* Partner-in-Charge for a confidential mixed-use development, including a 180-ft span tied arch pedestrian bridge over a plaza and city street.
- *Tradewinds Square, Kuala Lumpur, Malaysia.* Partner-in-Charge for a confidential mixed-use development, including a multi-block, long-span pedestrian bridge spanning over a street and light-rail line.
- *PANYNJ, Port Authority Bus Terminal Seismic Upgrade, New York, NY.* Partner-in-Charge for a seismic upgrade of this 2 million-sf (186,000-sm) transportation hub. The project involved strengthening of the existing structure to enhance its seismic stability.
- *M3M Golf Estate, Mumbai, India.* Partner-in-Charge for a new 2 million-sf residential development containing 19 residential buildings ranging in height from 6 to 42 stories, including a 10-story bridge building with the top three floors spanning 150 feet. This project used a design-build project delivery method.
- *High-Rise Mixed-Use Development, Middle East.* Partner-in-Charge for a new 8,000,000 million-sf (740,000-sm) mixed-use development in the Middle East being built on a design-build basis.
- *4 World Trade Center, New York, NY.* Partner-in-Charge for this 977-ft, 2.3 million-sf LEED Gold office tower, the first to open on the redeveloped World Trade Center site, with direct in-building access to 11 subway lines and the PATH trains to New Jersey. In order to provide expansive, column-free views, the design called for 80-ft clear main spans and 20- to 45-ft cantilevers around the perimeter of the building, accomplished by the use of only four perimeter columns per side, which pass seamlessly into a complex below-grade program.
- *Bitexco Financial Tower, Ho Chi Minh City, Vietnam.* Partner-in-Charge for this 68-story, 870-ft, 1.23 million-sf office tower, constructed as the tallest building in Vietnam. The 50<sup>th</sup> Floor helipad cantilevers 85 ft over the city street below.
- *Capitol Crossing, Washington, D.C.* Partner-in-Charge for a 2.5 million-sf, three-city-block development constructed above Federal Highway 495, including five office buildings, two residential buildings and a museum.
- *550/520 West 41st Street, New York, NY.* Partner-in-Charge for a new 1,100-ft, 1,400-unit residential tower and large retail podium. An Amtrak rail line and the No. 7 subway pass through the site.
- *Al Assima, Kuwait City, Kuwait.* Partner-in-Charge for a new 1.45 million-sf mixed-use complex situated in the Central Business District. A central atrium anchors two undulating bands of retail space and is covered by a long-span steel and transparent fabric roof.
- *Jinan Cheda International Financial Center, Jinan, China.* Partner-in-Charge for a new 950-ft, 1.3 million-sf office tower, part of a new commercial and mixed-use district planned by the municipal government.
- *Ben Thanh Towers, Ho Chi Minh City, Vietnam.* Partner-in-Charge for a new mixed-use development consisting of a 770-ft tower and a 740-ft tower connected by a 9-story podium.
- *Hyderabad Office Tower, Hyderabad, India.* Partner-in-Charge for the schematic design and peer review of a new 17-story, 980-ft-long, 1.6 million-sf office building built over a double-height ground floor and five parking levels.
- *Shanghai World Financial Center, Shanghai, China.* Partner-in-Charge for the podium and basements of this 1,614-ft mixed-use tower. When the developer elected to build a taller building than originally planned on the existing foundations, LERA developed a new structural system using less steel and concrete, reducing costs and speeding up construction.

- *Fenway Center, Boston, MA.* Partner-in-Charge for a new 1.3 million-sf development planned for construction above the Massachusetts Turnpike, including a 23-story residential tower.
- *Repsol – YPF, Buenos Aires, Argentina.* Partner-in-Charge for this 35-story, 580,000-sf office tower.
- *Publix on the Bay Supermarket, Miami, FL.* Partner-in-Charge Publix Supermarket's 150,000-sf flagship store featuring a sloped, curved and cantilevered metal roof measuring 300 ft by 200 ft.
- *BASF Headquarters, Mount Olive, NJ.* Partner-in-Charge for BASF Corporation's NJ headquarters, totaling 977,000 sf of office space and 840,000-sf of parking space.
- *Korean Mission, New York, NY.* Partner-in-Charge for a 13-story, 90,000-sf building designed for the Republic of Korea Permanent Mission to the United Nations.
- *Torre Picasso, Madrid, Spain.* Project Manager for this 47-story, 515-ft office building.
- *FERC Building, Washington, D.C.* Partner-in-Charge for this 11-story, 900,000-sf office building with three levels of basement parking.
- *Lodha World Towers, Mumbai, India.* Partner-in-Charge for a new 8 million-sf residential developed composed of three luxury high-rise towers and a parking structure. The 120-story World One Tower will become the tallest residential building in the world upon completion.
- *Marriott International Hotel & Vietnam National Convention Center, Hanoi, Vietnam.* Partner-in-Charge for a 9-story, 600,000-sf waterfront hotel and convention center featuring cantilevers of up to 131 ft.
- *Oberoi Skyz, Mumbai, India.* Partner-in-Charge for a pair of 60-story, 755-ft, 450,000-sf residential towers supported by a 5-story podium and two basement levels.
- *Canal Point Hotel, Dubai, UAE.* Partner-in-Charge for the schematic design of a 1,470-ft, 1.7 million-sf hotel and residential tower and 9-story podium.
- *Horizen Hotel Tower, New York, NY.* Partner-in-Charge for a 25-story, 100,000-sf hotel tower in Manhattan's Flatiron district.
- *The Standard, East Village, New York, NY.* Partner-in-Charge for this 21-story, 100,000-sf hotel featuring an aluminum and fritted glass curtain wall and a dynamic sculptural form.
- *Bundox Residential Development, Reno, NV.* Partner-in-Charge for a residential development consisting of a 21-story residential tower and a 35-story residential tower, totaling 450,000 sf.
- *Espirito Santo Plaza, Miami, FL.* Partner-in-Charge for a 37-story, 755,000-sf mixed-use tower and an adjacent 13-story, 500,000-sf parking garage. A 10-story atrium is enclosed with a steel framed skylight and 60-ft-wide by 110-ft-high steel framed glass wall. A two story pedestrian bridge interconnects the parking garage and the tower.
- *Trump International Hotel & Condominiums New York, NY.* Partner-in-Charge for the peer review of this 45-story hotel and condominium tower.
- *Tregunter Path, Hong Kong, China.* Partner-in-Charge for the schematic design and peer review of this 67-story, 676-ft residential tower.
- *Olympic Heights, The Philippines.* Partner-in-Charge for a residential complex consisting of three 37-story towers constructed above a 2-story podium.
- *Vista Hotel Renovation, New York, NY.* Partner-in-Charge for renovations to the 22-story, 242-ft World Trade Center Marriott Vista Hotel following the 1993 bombing.
- *Academic Building I, CUNY John Jay College, New York, NY.* Partner-in-Charge for a 14-story, 625,000-sf academic and laboratory building featuring a 55,000-sf landscaped roof. The building is constructed over the Amtrak rail line which passes below the southwestern portion of the site.
- *Butler College, Princeton University, Princeton, NJ.* Partner-in-Charge for a new 113,000-sf, 5-building academic complex containing residential suites for graduate students and faculty.
- *Integrated Sciences Building, SUNY Geneseo, Geneseo, NY.* Partner-in-Charge for a new 5-story, 105,000-sf academic facility containing classrooms, office space and advanced laboratory facilities.
- *Museum of Islamic Art, Doha, Qatar.* Partner-in-Charge for a new 340,000-sf museum composed of architecturally exposed concrete and containing five separate bridges.
- *German Historical Museum Addition, Berlin, Germany.* Partner-in-Charge for a glass-and-steel addition to this classic museum, featuring a 16,100-sf glass wall and a 9,500-sf skylight.
- *Portland Museum of Art, Portland, ME.* Project Manager for a 62,500-sf expansion to this art museum.

- *Chicago Bears Stadium, Chicago, IL.* Partner-in-Charge for the schematic design for three separate stadium designs for a new football stadium for the Chicago Bears.
- *Meyerson Symphony Center, Dallas, TX.* Project Manager for a 260,000-sf, 2,200-seat performance hall, home of the Dallas Symphony Orchestra.
- *IZOD Center, East Rutherford, NJ.* Project Designer for a 22,000-seat adaptable arena. The project was the largest post-tensioned structural steel folded plate roof in the world.
- *New Playhouse Theater, Cleveland, OH.* Project Manager for the renovation of an existing theater complex, housed in a former church building, and expansion into an adjacent 200,000-sf retail building.
- *Chicago Bears Indoor Practice Field, Lake Forest, IL .* Partner-in-Charge for this fieldhouse containing a regulation size football field, a running track, a racquetball court, locker rooms and viewing platform.
- *Baseball Hall of Fame Renovation, Cooperstown, NY.* Partner-in-Charge for a major reconfiguration of the existing Baseball Hall of Fame and an upgrade of exhibit layout.

## Teaching Experience

### Cornell University

Advisory Council, School of Civil and Environmental Engineering	1985 – 1992
Advisor, Master of Civil Engineering Design Project	1983 – 1984

## Professional Licenses and Designations

Licensed Professional Engineer, New York	1981 – Present
Licensed Professional Engineer, New Jersey	1984 – Present
Licensed Professional Engineer, Texas	1985 – Present
Licensed Professional Engineer, Florida	1992 – Present
Licensed Professional Engineer, Pennsylvania	1994 – Present
Licensed Professional Engineer, Connecticut	1999 – Present
Licensed Professional Engineer, Ontario, Canada	2016 – Present
Licensed Professional Engineer, Nevada	2020 – Present
Licensed Structural Engineer, California	1987 – Present
Licensed Structural Engineer, Illinois	1997 – Present
Licensed Structural Engineer, Massachusetts	2004 – Present
Licensed Civil Engineer, California	1984 – Present
Licensed Civil Engineer, Massachusetts	2002 – Present

## Education

Master of Engineering (Civil), Cornell University	1978
Bachelor of Science with distinction, Cornell University	1977

## Publications

Co-Author, “A Structural Engineer’s Approach to Differential Vertical Shortening in Tall Buildings” <i>International Journal of High-Rise Buildings</i> , CTBUH	March 2017
Author, “Bitexco Financial Tower” <i>STRUCTURE Magazine</i>	June 2009

Co-Author, <b>"Considerations for Retrofit of Existing Steel Buildings for Resisting Blast and Progressive Collapse"</b> Blast Design Symposium, AISC/SINY, New York, NY	2003
Co-Author, <b>"Rising High"</b> <i>Urban Land Magazine</i>	November/December 2000

## Presentations

Invited Presenter, <b>"Structural Design for Tall and Iconic Buildings in the Aftermath of 9/11"</b> Princeton University, Princeton, NJ	2004
Invited Presenter, <b>"Successful Exposed to View Structures"</b> Structural Engineering Association of Texas, Austin, TX	1999
Invited Presenter, <b>"The Art of Structural Engineering"</b> Texas Society of Architects Annual Convention, Dallas, TX	1995
Invited Presenter, <b>"The World Trade Center Bombing &amp; Reconstruction"</b> Boston Society of Civil Engineers Annual Meeting, Boston, MA	1994

## Professional Honors and Awards

The World Trade Center Medal for Exceptional Service <i>City of New York</i>	1993
Cited as "Those Who Made Marks in the Construction Industry" <i>Engineering News Record</i>	1989

## Professional Affiliations

<b>Fellow</b> <i>American Society of Civil Engineers (ASCE)</i>	1997 – Present
<b>Member</b> <i>New York City Building Codes Structural Loads Committee</i>	2006 – 2008
<b>Member</b> <i>American Institute of Steel Construction (AISC) Blast and Impact Resistant Design Committee</i>	2001 – 2003
<b>Past-Chairman, Committee CL-5, Gravity Loads and Temperature Effects</b> <i>Council on Tall Buildings and Urban Habitat (CTBUH)</i>	1995 – 1999

Updated 14 October 2020



# RICHARD ZOTTOLA, P.E., S.E.

## Partner

Mr. Zottola works on projects in the role of Project Director and Partner-in-Charge. He guides the efforts of our Project Manager in the development of the structural design and in the coordination of structural engineering services with the Owner, Architect, Services Engineer and Contractor. Mr. Zottola works closely with the other Partners and with the staff of other firms.

### PROFESSIONAL EXPERIENCE

LERA Consulting Structural Engineers  
1982 to Present

### REGISTRATION

Professional Engineer – NY,  
Licensed or eligible in all 50 states

Structural Engineer – OK

Qualified Exterior Wall Inspector (QEWI),  
NYC DOB Façades Unit

### EDUCATION

Cornell University,  
Master of Engineering (Structural), 1982

Cornell University,  
Bachelor of Science (Civil), 1981

### HONORS & ACTIVITIES

Chair Elect, Executive Committee,  
Board of Directors, American Council of  
Engineering Companies New York

Member, American Society of Civil  
Engineers

Member, American Council of  
Engineering Companies New York

WTC Medal for Individual Acts of Valor,  
1993

### INVESTIGATIONS/EXPERT WITNESS TESTIMONY

Football Stadium, *United Kingdom*

Apartment Building, *New Jersey*

High-Rise Hotel, *Nevada*

Concrete Overpass Investigation, *New York*

Hospital C & D Building Settlement Investigation, *New York, NY*

NIST, Investigation of the World Trade Center Collapse, *New York, NY*

1993 World Trade Center Bombing Investigation, *New York, NY*

### RENOVATIONS/HISTORIC PRESERVATION

CUNY Lehman College, Gillet Hall Renovation, *Bronx, NY*

The Women's Building Condition Assessment, *New York, NY*

Apollo Theater Restoration & Expansion, *New York, NY*

DCAS, Historic Preservation Services On-Call, *New York, NY*

NYC DDC, New York Hall of Science – Great Hall Restoration, *Queens, NY*

NYC DDC, Brooklyn Public Library, DeKalb Branch Renovation, *Brooklyn, NY*

NYC OMB, Brooklyn Navy Yard Naval Annex Master Planning Study, *Brooklyn, NY*

NYC OMB, Manhattan Beach Bathhouse Master Planning Study, *Brooklyn, NY*

Columbia University Department of Real Estate Façade Repairs, *New York, NY*

St Ann's Holy Trinity Church, *New York, NY*

Children's Place Headquarters, *Hackensack, NJ*

Marriott, World Trade Center, *New York, NY*

Chase Manhattan Bank, *Stony Brook, NY*

Windows on the World Renovation, *New York, NY*

Stuyvesant Town Renovations, *New York, NY*

### GOVERNMENT/JUSTICE

PANYNJ, LaGuardia Int'l Airport – Police Emergency Facility, *Queens, NY*

United Nations, Capital Master Plan & Infrastructure Upgrades, *New York, NY*

World Trade Center Renovations, *New York, NY*

### TRANSPORTATION/AVIATION

Delta Airlines, LaGuardia Int'l Airport – Delta Terminal C East, Terminal C West & Terminal D Demo, *Queens, NY*

The LaGuardia Partnership, LaGuardia Int'l Airport – Terminal B Pier A & B Demo, *Queens, NY*

The LaGuardia Partnership, LaGuardia Int'l Airport – Temporary Connector Bridge, *Queens, NY*

PANYNJ, LaGuardia Int'l Airport – Police Emergency Facility, *Queens, NY*

American Airlines, Newark Int'l Airport – Admirals Club Renovation, *Newark, NJ*

PANYNJ, Newark Int'l Airport – Ticket Counter and Back Office Reorganization Study, *Newark, NJ*

PANYNJ, Newark Int'l Airport – Signage and LED Flight Information Replacement, *Newark, NJ*

PANYNJ, JFK Int'l Airport – TWA Terminal & Terminal 5 (Condition Survey), *New York, NY*

PANYNJ, Interim WTC PATH Station, *New York, NY*

PANYNJ, IRT Subway Station Interface, WTC, *New York, NY*

PANYNJ, PATH Journal Square Renovations, *Jersey City, NJ*

PANYNJ, GW Bridge Bus Terminal Studies, *New York, NY*

CCDA, McCarran Int'l Airport – Satellite D Expansion, *Las Vegas, NV*

Eastern Provinces Int'l Airport, *Dhahran, Saudi Arabia*

LER A

## PAPERS & TALKS

Panelist, "Emerging Models for Growing Life Science Companies," Westchester Biotech Project Innovation in Research Symposium, *March 2019*

Moderator, "Govt. Agency Session E: Engineering a Sustainable Future for NY State," ACEC NY Winter Conference, *2018*

Co-author, "Structural Systems for the New Bank of China Building," Fourth International Conference on Tall Buildings, Hong Kong & Shanghai, China

Co-author, "Material Selection in the Design of Innovative Structures – Sentra BDNI Development"

"Puerta De Europa" and "Composite Structures in Asia," American Concrete Institute Fall Convention, Montreal, Canada, *1995*

## HEALTHCARE/LABORATORY/RESEARCH

SBUH, Pediatric Rooftop Garden & Healing Center, *Stony Brook, NY*

SBUH, Parking Garage Feasibility Study, *Stony Brook, NY*

Stony Brook Southampton Hospital, East Hampton Free Standing Emergency Department, *Southampton, NY*

SUNY Upstate Hospital, Cord Blood Facility, *Syracuse, NY*

SUNY Downstate Medical Center, UHB Servery & Dining Area Renovation, *Brooklyn, NY*

Columbia University Medical Center, Vivarium Modernization, *New York, NY*

Columbia University Medical Center, ADARC Lab Renovation, *New York, NY*

Northwell Health, Clinical Laboratory of New York, *Queens, NY*

Northwell Health, Center for Advanced Medicine, *Queens, NY*

NYC EDC, Public Health Lab, *New York, NY*

NYC DEP, West of Hudson Headquarters & Laboratory, *Kingston, NY*

NYC DDC, Confidential NYC Agency Consolidation, *Queens, NY*

NYC DDC, Morrisania Sexual Health Clinic Renovation, *Bronx, NY*

NYC EDC/H+H, Coney Island Hospital Flood Mitigation Plan, *Brooklyn, NY*

NYC H+H, Bellevue Hospital Emergency Department Flood Mitigation Plan, *New York, NY*

NYS OGS, NY Psychiatric Institute, Bldg No. 5 Expansion Feasibility Study, *New York, NY*

Roswell Park Cancer Institute Research Complex, *Buffalo, NY*

Buck Institute for Age Research, *Novato CA*

Benedictine Hospital Renovation, *Kingston, NY*

Almaty International Medical Center, *Almaty, Kazakhstan*

## EDUCATIONAL FACILITIES

SUNY Albany, Rehabilitation of Husted Hall, *Albany, NY*

SUNY Albany, School of Business, *Albany, NY*

SUNY Buffalo, Life Sciences Complex, *Buffalo, NY*

SUNY Cortland, Bowers Hall Renovation, *Cortland, NY*

SUNY Farmingdale, School of Applied Social Sciences, *Farmingdale, NY*

SUNY Farmingdale, Biotechnology Incubator Facility, *Farmingdale, NY*

SUNY Farmingdale, Roosevelt Hall Rehabilitation, *Farmingdale, NY*

SUNY Maritime, Vander Clute Hall Study, *Bronx, NY*

SUNY New Paltz, Engineering Innovation Hub, *New Paltz, NY*

SUNY Stony Brook, Chemistry Building Renovation, *Stony Brook, NY*

CUNY Advanced Science Research Center, *New York, NY*

CUNY Hunter College, Sara Delano Roosevelt House Renovation, *New York, NY*

CUNY Lehman College, Nursing School, *Bronx, NY*

CUNY Lehman College, Science Facility, *Bronx, NY*

CUNY Medgar Evers College, Academic Building I, *Brooklyn, NY*

NYC SCA, Mott Haven Campus, *Bronx, NY*

Cornell University, Ives Hall Renovation, *Ithaca, NY*

New York University, Wagner School, *New York, NY*

Rockefeller University, Founders' Hall Modernization, *New York, NY*

Rockefeller University, Welch Library Master Plan, *New York, NY*

Columbia University, East Campus Master Plan, *New York, NY*

Columbia University, Mudd Hall Rooftop Handrail, *New York, NY*

Stamford Ninth Grade Center, *Stamford, CT*

## MUSEUMS/CULTURAL FACILITIES

New York Tolerance Center, *New York, NY*

Huntington 9/11 Memorial, *Huntington, NY*

Seattle Art Museum, *Seattle, WA*

Rock 'N' Roll Hall of Fame and Museum, *Cleveland, OH*

Athens Museum, *Athens, Greece*

The Flynt Center of Early New England Life, *Deerfield, MA*

## SPORTS AND ENTERTAINMENT FACILITIES

NYC DDC, Hunts Point Youth Center, *Bronx, NY*

San Jose Convention Center, *San Jose, CA*

LA Fitness Center at iPark, *Lake Success, NY*

## HOTEL/RESIDENTIAL

Metro Green, *Stamford, CT*

Hamilton Court, *White Plains, NY*

Buckingham Place, *Manila, Philippines*

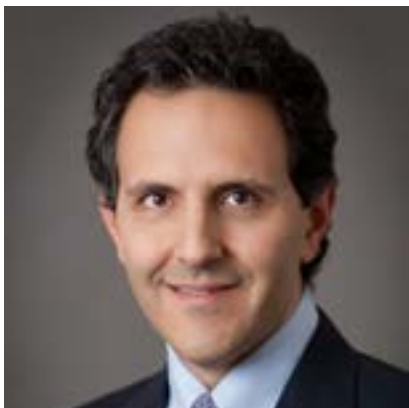
## OFFICE BUILDINGS

La Caixa Bank Headquarters, *Sant Cugat, Spain*

Puerta de Europa, *Madrid, Spain*

Bank of China Tower, *Hong Kong, China*

LERA



# ELIAS MATAR, P.E.

## Partner

Mr. Matar works on projects in the role of Project Director and Partner-in-Charge. He guides the efforts of our Project Manager in the development of the structural design and in the coordination of structural engineering services with the Owner, Architect, Services Engineer and Contractor. Mr. Matar works closely with all members of the design team to meet Client goals for budget and schedule.

### PROFESSIONAL EXPERIENCE

LERA Consulting Structural Engineers  
1990 to Present

### REGISTRATION

Professional Engineer – NY, NJ, PA, CT,  
MA, VA, TX, DC, OH, MI & NC

Director, Special Inspection Agency

### EDUCATION

Cornell University  
Master of Business Administration, 1990

Cornell University  
Master of Engineering (Civil), 1989

Cornell University  
BSCE with Distinction, 1988

### HONORS & ACTIVITIES

Governor of the New York Building  
Foundation, 2019 to Present

Member, AIA Professional Practice  
Committee, 2019 to Present

Chair, ACEC NY Vertical Construction  
Business Practice Committee,  
2019 to Present

Member, ACEC NY Vertical Construction  
Business Practice Committee and NYC  
SCA Committee, 2018 to Present

Member, NYBC Healthcare Committee,  
Higher Education Committee, and  
Council on Innovation & Best Practices,  
2018 to Present

Adjunct Associate Professor of  
Architecture, Columbia University,  
2005 to 2015

Member, SEAoNY, 1994 to Present

Member, ASCE, 1989 to Present

Member, Cornell Alumni Admissions  
Ambassador Network

World Trade Center Medal for Individual  
Acts of Valor, 1993

### INVESTIGATIONS/EXPERT WITNESS TESTIMONY

Hotel and Condominium Tower, *North America*

Kingston Pointe, *North Bergen, NJ*

Football Stadium, *United Kingdom*

### PEER REVIEWS/STRUCTURAL AUDITS

Two Liberty Place Peer Review, *Philadelphia, PA*

Two Tequesta Point Residential Project, *Miami, FL*

Torre Banco de la Nación, *Lima, Peru*

Mixed-Use Development, *Lima, Peru*

Post-Hurricane Damage Assessment, *Espirito Santo, Miami, FL*

### RENOVATIONS/REPAIRS

NYCHA, Patterson Houses Bldg 13 Water Tank Repair, *Bronx, NY*

NYC DDC, Corona Health Center Renovation, *Queens, NY*

NYC DDC, Bronx Housing Court Elevator & Escalator Modernization, *Bronx, NY*

NYC DDC, Pamoja House Bathrooms Upgrade, *Brooklyn, NY*

NYC DDC, Precinct Station Houses Front Desk Replacements, *Brooklyn, NY*

NYC EDC, Brooklyn Army Terminal Phase V Renovation, *Brooklyn, NY*

NYS OGS, Jamaica Armory Renovation, *Queens, NY*

NYC OMB, Soldiers' & Sailors' Memorial Monument, *New York, NY*

PANYNJ, Structural Call-In Services, *New York, NY*

DSNY, Bronx 4 Garage Renovation, *Bronx, NY*

World Trade Center Repairs Due to Bombing, *New York, NY*

### MASTER PLANNING/FEASIBILITY STUDIES

Rutgers University, College Ave Quad Study, *New Brunswick, NJ*

Rutgers University, Student Quadrangle Plan, *New Brunswick, NJ*

NYC OMB, Manhattan Courts Master Plan: Phase III, *New York, NY*

CUNY John Jay College, Sealy Library Renovation, *New York, NY*

CUNY Brooklyn College, Science & Resilience Institute at Jamaica Bay, *Brooklyn, NY*

CUNY Brooklyn College, Roosevelt Hall Feasibility Study, *Brooklyn, NY*

SUNY Stony Brook, Southampton Hall Renovation, *Stony Brook, NY*

SUNY Fredonia, Facilities Master Plan, *Fredonia, NY*

NYU Lutheran Augustana Center, Expanded Feas. Study, *Brooklyn, NY*

Freight Elevator Upgrade, World Trade Center Hub, *New York, NY*

### OFFICE/MIXED-USE

Espirito Santo Plaza, *Miami, FL*

Hermitage Plaza, *Paris, France*

Shanghai World Financial Center, *Shanghai, China*

BASF Headquarters, *Mount Olive, NJ*

Puerta de Europa, *Madrid, Spain*

Mixed-Use Project, *Peru*

Office Tower, *Peru*

Waterfront Integrated Resort, *Colombo, Sri Lanka*

Sentra BDNI, *Jakarta, Indonesia*

La Caixa Bank Headquarters, *Sant Cugat, Spain*

### GOVERNMENT

DASNY, Staten Island Courthouse, *Staten Island, NY*

United Nations, Consolidated Building, *New York, NY*

LERA

## PAPERS & TALKS

Co-Author, "Espirito Santo Plaza, Miami, Florida," Structural Engineering International, *February 2003*

"Espirito Santo Plaza – Miami's Newest Tower," *October 2002, New York, NY*

## LANGUAGES

English, Spanish, French, Arabic

## MUSEUMS/CONVENTION CENTERS

Newseum and Freedom Forum, *Washington, DC*

Albany Convention Center and Hotel, *Albany, NY*

## AVIATION/TRANSPORTATION

PANYNJ, Structural Call-In Services, *New York, NY*

PANYNJ, Holland Tunnel Toll Booth Building Column Removal, *New York, NY*

PANYNJ, Port Authority Bus Terminal Competition, *New York, NY*

CCDA, McCarran International Airport Expansion, *Las Vegas, NV*

Air Traffic Control Tower, *Bourne, MA*

## HEALTHCARE/RESEARCH

SBUH, OR Expansion, *Stony Brook, NY*

SBUH, Imaging Area Optimization, *Stony Brook, NY*

SBUH, Hybrid Cath Lab & Equipment Replacement, *Stony Brook, NY*

Mount Sinai South Nassau, Medical Arts Pavilion, *Long Beach, NY*

Mount Sinai South Nassau, Southwest Addition, *Oceanside, NY*

Mount Sinai South Nassau, Central Utility Plant, *Oceanside, NY*

Mount Sinai South Nassau, J-Wing Addition Interim Stair, *Oceanside, NY*

Mount Sinai South Nassau, Non-FEMA Related Projects, *Oceanside, NY*

OBHS, Aaron Pavilion Inpatient Services Relocation, *Brooklyn, NY*

OBHS, Interfaith Medical Center EES Risers and Closets, *Brooklyn, NY*

NYU Lutheran Augustana Center, Parking Structure Repairs, *Brooklyn, NY*

NYU Langone Health, Kimmel Pavilion Inspections, *New York, NY*

Northport VA Medical Center, Electrical Upgrade, *Northport, NY*

Northport VA Medical Center, ICU Relocation, *Northport, NY*

## EDUCATION

NYC SCA, PS 131 Q Addition, *Queens, NY*

NYC SCA, PS 144 Q Addition, *Queens, NY*

NYC SCA, PS 138 X Addition, *Bronx, NY*

NYC SCA, PS 166 Modernization, *New York, NY*

NYC SCA, PS 705 at K022 Infrastructure Upgrades, *Brooklyn, NY*

NYC SCA, K405 Infrastructure Upgrades, *Brooklyn, NY*

CUNY Graduate Center, Center for Data Visualization, *New York, NY*

CUNY Hunter College, Cooperman Library Renovation, *New York, NY*

CUNY Kingsborough, Performing Arts Center Reno, *Brooklyn, NY*

CUNY Lehman College, Bookstore Relocation, *Bronx, NY*

CUNY Macaulay, New Media Jobs Incubator & Lab, *New York, NY*

CUNY Macaulay, RTU Screen, *New York, NY*

CUNY Medgar Evers, Carroll St Bldg Reno, *Brooklyn, NY*

CUNY Queens, Outdoor Athletic Facility, *Queens, NY*

CUNY Queens, HUB Renovation, *Queens, NY*

CUNY Staten Island, Center for Big Data Reno, *Staten Island, NY*

CUNY Staten Island, Building 2M Phase 4 Reno, *Staten Island, NY*

CUNY Staten Island, Garage/Maintenance Facility, *Staten Island, NY*

SUNY Albany, E-TEC Building, *Albany, NY*

SUNY Binghamton, Steam Generators, *Binghamton, NY*

SUNY Buffalo, Foster Hall Renovation, *Buffalo, NY*

SUNY Cortland, Bowers Hall Renovation, *Cortland, NY*

SUNY Fredonia, Facilities Master Plan, *Fredonia, NY*

SUNY Stony Brook, Javits Lecture Hall Renovation, *Stony Brook, NY*

SUNY Stony Brook, Indoor Practice Facility, *Stony Brook, NY*

SUNY Stony Brook, Graduate Chem Bldg Reno, *Stony Brook, NY*

SUNY Westchester, Gateway Center, *Valhalla, NY*

CUMC, Vagelos Education Center – Inspections, *New York, NY*

Brown University, Friedman Study Commons, *Providence, RI*

School of American Ballet, *New York, NY*

## INTERIORS/FIT-OUTS

Media Company Office, 4 World Trade Center, *New York, NY*

Hudson River Trading Office, 4 World Trade Center, *New York, NY*

MediaMath Office, 4 World Trade Center, *New York, NY*

Weber Shandwick Office, *New York, NY*

Retail & Dining, Westfield World Trade Center, *New York, NY*

BrainPOP Office Stair, *New York, NY*

Girl Scouts of the USA Office, *New York, NY*

Burger & Lobster Bryant Park, *New York, NY*

LERA



## RICHARD B. GARLOCK, P.E.

### Partner

Mr. Garlock works on projects in the role of Project Director and Partner-in-Charge. He guides the efforts of our Project Manager in the development of the structural design and in the coordination of structural engineering services with the Owner, Architect, Services Engineer and Contractor. As LERA's Signatory Director to the SE2050 Carbon Reduction Program, he oversees and implements the firm's sustainable design initiatives, with the aim of reducing the carbon footprint of LERA's structures and promoting sustainable design and construction practices industry-wide.

#### PROFESSIONAL EXPERIENCE

LERA Consulting Structural Engineers  
1993 to Present

#### REGISTRATION

Professional Engineer – NY, NJ, PA, VA & OH (TX pending)

#### EDUCATION

Lehigh University  
M.S. (Civil Engineering), 1993

Syracuse University  
B.S.C.E. (Civil Engineering), 1990

#### TEACHING

Visiting Lecturer, Department of Civil and Environmental Engineering, Princeton University, 2005 to Present

#### HONORS & ACTIVITIES

Signatory Director, Structural Engineers 2050 Commitment Carbon Reduction Program (SE2050)

Juror, CTBUH Awards 2020

Structures Specialist, State of New Jersey Office of Emergency Management, Urban Search & Rescue (NJ TF1)

- Tropicana Parking Garage, Atlantic City, NJ
- PETCO Gas Explosion, Eatontown, NJ
- Apartment Building, Hackensack, NJ

Member, Structural Engineers Association of New York (SEAoNY)

Member, American Society of Civil Engineers (ASCE)

SEAoNY Speed Mentor, May 2019

#### SPECIALIZED TRAINING

Urban Search & Rescue Structure Specialist I & II

ATC 20-1 Post-Earthquake Safety Evaluation of Buildings

Self Contained Breathing Apparatus Qualified

Confined Space Entry

#### INVESTIGATIONS/EXPERT WITNESS TESTIMONY

Baseline Performance of the World Trade Center Towers, NIST WTC Investigation, Washington, DC

#### PEER REVIEWS

15 Hudson Yards, *New York, NY*  
1 World Trade Center, Freedom Tower, *New York, NY*  
2 World Trade Center, *New York, NY*  
3 World Trade Center, *New York, NY*  
7 World Trade Center, *New York, NY*  
AOL Time Warner Center, *New York, NY*  
225 West 57th Street, *New York, NY*  
111 West 57th Street, *New York, NY*  
9 DeKalb Avenue, *Brooklyn, NY*  
Queens Plaza Park, *Long Island City, NY*  
23 Park Row, *New York, NY*  
76 11th Avenue, *New York, NY*  
Torre Espacio, *Madrid, Spain*

#### SECURITY PROJECTS

Regional Justice Center, *Las Vegas, NV*  
Federal Facility Security Enhancement, *Building 1*  
Federal Energy Regulatory Commission, *Washington, DC*

#### EMERGENCY RESPONSE

KL Sentral, *Kuala Lumpur, Malaysia*  
World Trade Center Bombing – Repairs and Reconstruction, *New York, NY (Field Engineer)*  
World Trade Center Recovery, *New York, NY (Field Engineer)*  
AOL Time Warner Scaffolding Stabilization, *New York, NY (Contractor's Engineer)*

#### CONVENTION CENTERS/ARENAS/THEATERS

Baltimore Convention Center Expansion, *Baltimore, MD*

#### OFFICE/MIXED-USE

4 World Trade Center, *New York, NY*  
Pacific Park Brooklyn, *Brooklyn, NY*  
Media Company Office, 4 World Trade Center, *New York, NY*  
Hudson River Trading Office, 4 World Trade Center, *New York, NY*  
Hudson River Trading Office, 3 World Trade Center, *New York, NY*  
Schuylkill Yards Development, *Philadelphia, PA*  
3151 Market Street, *Philadelphia, PA*  
Confidential Office Development, *Northeastern United States*  
Supertall Tower, *Malaysia*  
United Nations Consolidated Building, *New York, NY*  
Sentra BDNI, *Jakarta, Indonesia*

#### RESIDENTIAL/HOTEL

550 West 41st Street, *New York, NY*  
520 West 41st Street, *New York, NY*  
Pacific Park Brooklyn, *Brooklyn, NY*  
Tower 1, *Jersey City, NJ*  
Tower 2, *Jersey City, NJ*  
Schuylkill Yards Development, *Philadelphia, PA*  
West Street Residential Project, *New York, NY*

LER A

## PAPERS & TALKS

Presenter, "Looking at the Past and Into the Future: Structural Design Innovations for Tall Buildings," CTBUH World Congress, Chicago, IL, *October 2019*

Co-Presenter, "What Lies Beneath: Is NYC Earthquake-Ready?" CTBUH NY, New York, NY, *May 2019*

Presenter, "World Trade Center | Tower 4: Cultivating the Design Solution," NASCC: The Steel Conference, San Antonio, TX, *March 2017*

Author, "Sustainable Design: A Structural Perspective," Int'l Roundtable on Engineering, Construct Canada, *2005*

Co-Author, "Considerations for Retrofit of Existing Steel Buildings for Resisting Blast and Progressive Collapse," AISC Blast Design Symposium, New York, NY, *2003*

Debrosses Street Loft, *New York, NY*

Tradewinds Residential Tower, *Kuala Lumpur, Malaysia*

KLCC Residential Tower Land N, *Kuala Lumpur, Malaysia*

Grange Court, *Singapore*

## RENOVATIONS/RETAIL

Nordstrom Flagship Store, 1776 Broadway, *New York, NY*

Prada SoHo, 575 Broadway, *New York, NY*

World Trade Center Master Plan – Plaza Windscreen, *New York, NY*

World Trade Center Tenant Modifications, *New York, NY*

7WTC Adjacent Slurry Wall Stabilization, *New York, NY*

## HEALTHCARE/RESEARCH

3151 Market Street, *Philadelphia, PA*

Schuylkill Yards Development, *Philadelphia, PA*

## CULTURAL/PERFORMING ARTS

Rock and Roll Hall of Fame & Museum, *Cleveland, OH*

New York Hall of Science Addition, *Queens, NY*

William J. Clinton Presidential Center, *Little Rock, AR*

Princeton University, Lewis Center for the Arts – Peer Review & Value Engineering, *Princeton, NJ*

Gagosian Gallery Renovation, *New York, NY*

## EDUCATION

Princeton University, Butler College, *Princeton, NJ*

Princeton University, Friend Center for Engineering, *Princeton, NJ*

Princeton University, School of Architecture, *Princeton, NJ*

Princeton University, E-Quad Renovations, *Princeton, NJ*

Columbia University, Alfred Lerner Hall – Ramps and Glass Wall (Contractor's Engineer), *New York, NY*

University Residential Tower, *New York, NY*

NYC SCA, PS 166 Modernization, *New York, NY*

NJ SDA, Roosevelt Elementary School, *Passaic, NJ*

NJ SDA, Central Avenue Elementary School, *Passaic, NJ*

NJ SDA, Henry Howe Elementary School, *Passaic, NJ*

NJ SDA, Main Street Elementary School, *Passaic, NJ*

NJ SDA, Thomas Jefferson Elementary School, *Passaic, NJ*

## SCULPTURES

Richard Serra sculpture, *Gagosian Gallery – 1999/2000*

Chris Burden sculpture, *Gagosian Gallery – 2000*



## W. JOHN PUGH, P.E., M.ASCE

### Associate Partner

As Project Manager, Mr. Pugh provides detailed guidance on the analysis and development of the structural design and coordinates structural engineering services with the Owner, Architect, Services Engineer and Contractor. He works closely with LERA's Project Director and Partner-in-Charge and with the staff of other firms.

#### PROFESSIONAL EXPERIENCE

LERA Consulting Structural Engineers  
1978 to Present

#### REGISTRATION

Professional Engineer – NY

#### EDUCATION

Pennsylvania State University  
Bachelor of Architectural Engineering,  
1978

#### INVESTIGATIONS

Office Tower, *Mumbai, India*  
Hotel and Condominium Tower, *North America*  
Commuter Rail Structure, *North America*  
Football Stadium, *United Kingdom*  
Liberty Place II, *Philadelphia, PA*  
Chek Lap Kok Int'l Airport Roof Evaluation, *Hong Kong, China*  
McCormick Place Convention Center, *Chicago, IL*

#### PEER REVIEWS/VALUE ENGINEERING

Parc 1 Mixed-Use Development, *Seoul, South Korea*  
Busan Lotte Town Tower, *Busan, South Korea*  
15 Hudson Yards, *New York, NY*  
53 West 53rd Street, *New York, NY*  
150 West 58th Street, *New York, NY*  
605 West 42nd Street, *New York, NY*  
91 Pacific Street, *Brooklyn, NY*  
NYCHA, Baruch Houses & Lavanburg Homes, *New York, NY*  
Icon Hotel, Dubai Promenade, *Dubai, UAE*  
One Central, The Mandarin Oriental, *Macau, China*  
The CTF Tianjin, *Tianjin, China*  
International Commerce Centre, Kowloon, *Hong Kong, China*  
Guangzhou Tower East, *Guangzhou, China*  
International Finance Center 1 & 2, *Hong Kong Station, China*  
Jing Ao Center, *Beijing, China*  
Landmark Tower, *Hong Kong, China*  
Office Towers, *Peru*  
Mary Avenue Pedestrian Bridge, *Cupertino, CA*  
Surfer's Paradise, *Brisbane, Australia*  
First Bank Place, *Minneapolis, MN*  
101 Hudson Street, *Jersey City, NJ*

#### GOVERNMENT BUILDINGS

U. S. Embassy, *Caracas, Venezuela*  
Government Center, *Toledo, OH*

#### CONFERENCE CENTERS/EXHIBITION

NYS ESD/CCOC, Javits Convention Center Renovation & Expansion, *New York, NY*

#### RENOVATIONS/REPAIRS

Port Authority Bus Terminal – Structural Modifications, *New York, NY*  
NYC EDC, Brooklyn Army Terminal – Phase V Renovations, *Brooklyn, NY*  
Federal Reserve Bank of Richmond, *Richmond, VA*  
World Trade Center Repairs Due to Bombing, *New York, NY*  
World Trade Center Tenant Modifications, *New York, NY*

#### HEALTHCARE/RESEARCH FACILITIES

NYC EDC/H+H, Coney Island Hospital New Tower & Campus Renovation, *Brooklyn, NY*  
NYU Langone Health, Kimmel Pavilion, *New York, NY*  
Buck Institute for Age Research, *Novato, CA*

## HONORS & ACTIVITIES

Member, Structural Engineer Association of New York (SEAO NY)

Member, American Society of Civil Engineers (ASCE)

Tau Beta Pi, National Engineering Honor Society

## OFFICE/MIXED-USE

Hyundai Global Business Center, Seoul, South Korea

Lotte World Tower, Seoul, South Korea

Shanghai World Financial Center, Shanghai, China

PNB 118, Kuala Lumpur, Malaysia

KLCC Lots 167 & 176, Kuala Lumpur, Malaysia

Mabarak Center, Lahore, Pakistan

Nakheel Tall Tower, Dubai, UAE

Rotating Tower, Dubai, UAE

Assima, Kuwait City, Kuwait

International Finance Center, Shenyang, China

Bank of China Tower, Hong Kong, China

TEDA Landmark Towers, Tianjin, China

Beijing Jing Ao Centre, Beijing, China

Sentra BDNI, Jakarta, Indonesia

AT&T Corporate Headquarters (now SONY), New York, NY

PPG Corporate Headquarters, Pittsburgh, PA

Puerta de Europa, Madrid, Spain

International Trade Center, Barcelona, Spain

## HOTEL/RESIDENTIAL

KLCC Lot 185, Kuala Lumpur, Malaysia

Shelter Island Residence, Shelter Island, NY

## AVIATION/TRANSPORTATION

King Fahd International Airport, Dhahran, Saudi Arabia

McCarran Airport Expansion – NE Wing, Las Vegas, NV

## RETAIL/DINING

Buddakan Restaurant, New York, NY

## MUSEUMS/GALLERIES

Lucas Museum of Narrative Art, Los Angeles, CA

Broad Art Museum, Los Angeles, CA

NASCAR Hall of Fame and Museum, Charlotte, NC

Newseum & Freedom Forum, Washington, D.C.

German Historical Museum Addition, Berlin, Germany

National Constitution Center, Philadelphia, PA

William J. Clinton Presidential Center, Little Rock, AR

## EDUCATIONAL FACILITIES

CUNY Staten Island, Center for Big Data Renovation, Staten Island, NY

CUNY John Jay College, Lloyd Sealy Library Renovation, New York, NY

SUNY Cobleskill, Agricultural Science & Technology Center, Cobleskill, NY

SUNY Binghamton, Academic Buildings and Greenhouse, Binghamton, NY

SUNY Westchester Community College, Gateway Center, Valhalla, NY

Temple University, Charles Library, Philadelphia, PA

University of Chicago, Rubenstein Forum, Chicago, IL

MassArt Design and Media Center, Massachusetts College of Art and Design, Boston, MA

Columbia University Medical Center, Vivarium Modernization, New York, NY

Fordham University, St. Peter the Fisherman Sculpture, New York, NY

RPI Center for Industrial Innovation, Troy, NY

Experimental Media Facility, Massachusetts Institute of Technology, Cambridge, MA

## CONSTRUCTION SURVEILLANCE

Bank of China Tower, Hong Kong, China – Senior Resident Structural Engineer, 2 years

World Trade Center Repairs due to Bombing, New York, NY – Senior Resident Structural Engineer, 2 years

Government Center, Toledo, OH – Senior Resident Structural Engineer



## JASON B. STONE, P.E. (CA)

### Associate Partner

As Project Manager, Mr. Stone provides detailed guidance on the analysis and development of the structural design and coordinates structural engineering services with the Owner, Architect, Services Engineer and Contractor. He works closely with LERA's Project Director and Partner-in-Charge and with the staff of other firms.

#### PROFESSIONAL EXPERIENCE

LERA Consulting Structural Engineers  
2002 to Present

#### REGISTRATION

Professional Engineer – CA

#### EDUCATION

Stanford University  
M.S. Structural Engineering, 2002

University of Illinois at Urbana-Champaign  
B.S. Civil Engineering (Mathematics minor), 2001

#### HONORS & ACTIVITIES

2016 Rising Stars Award, Civil + Structural Engineer

Juror, AISC IDEAS2 Awards, 2016

Committee Member, ACEC New York Design Build Committee

Associate Adjunct Professor of Architecture, Columbia University

#### INVESTIGATIONS/EXPERT WITNESS TESTIMONY

High-Rise Tower, *North America*  
Federal Facility, *Washington, DC*  
Football Stadium, *United Kingdom*

#### PEER REVIEWS

9 Dekalb Avenue, *Brooklyn, NY*  
India Bulls Sky Suites – Sky Tower Complex, *Mumbai, India*

#### HOTEL/RESIDENTIAL

NYC HPD, 581 Grant Ave Modular Development, *Brooklyn, NY*  
5 Gramercy Park West Renovation, *New York, NY*  
The Standard, East Village, *New York, NY*  
Marriott Moxy Hotel, The EDGE Collective, *St. Petersburg, FL*  
Global Building Modules  
Sculptura Ardmore, *Singapore*  
Oberoi Exquisite, *Mumbai, India*  
M3M Golf Estate, *Gurgaon, India*

#### OFFICE/INTERIORS

4 World Trade Center, *New York, NY*  
Next Jump Headquarters Renovation, *New York, NY*  
Shanghai World Financial Center, *Shanghai, China*  
3400 Market Street, *Philadelphia, PA*  
Corporate Headquarters, *South Korea*

#### RENOVATIONS/REPAIRS

NYC DDC, Home Life Insurance Building Interior Renovation, *New York, NY*  
Port Authority Bus Terminal Seismic Upgrade, *New York, NY*  
Sara Delano Roosevelt House, CUNY Hunter College, *New York, NY*

#### EDUCATIONAL FACILITIES

CUNY John Jay College, Academic Building I, *New York, NY*  
CUNY Hunter College, Sara Delano Roosevelt House Renovation, *New York, NY*  
CUNY Lehman College, Science Facility, *Bronx, NY*  
SUNY Westchester Community College, Gateway Center, *Valhalla, NY*  
SUNY Buffalo, Buffalo, Buffalo Life Sciences Complex, *NY*  
Stamford Ninth Grade Center, *Stamford, CT*

#### MUSEUMS/LIBRARIES

NYC DDC, Kew Gardens Hills Library, *Queens, NY*  
NYC DDC, New York Hall of Science Great Hall Façade, *New York, NY*  
Lucas Museum of Narrative Art, *Chicago, IL*  
William J. Clinton Presidential Center, *Little Rock, AR*  
Las Vegas Springs Preserve Visitor Center, *Las Vegas, NV*

## **PAPERS & TALKS**

Presenter, "The GBM System: Structural Perspective," CTBUH Future of Construction Lecture Series: Moving Parts, *January 2017*

Tour Leader, Open House New York, Engineering Weekend, John Jay College of Criminal Justice Tour, October 2015  
Author, "Justice is Served," *Modern Steel*, September 2014

Author, "John Jay College Expansion – Transforming a 21st Century Urban College Campus New York, NY," *STRUCTURE Magazine*, June 2013

Contributor, *Metals in Construction*, Winter 2013

## **TV/THEATER FACILITIES**

Apollo Theater Restoration & Expansion, *New York, NY*

CUNY John Jay College, Academic Building I – Gerald Lynch Theater, *New York, NY*

Lucas Museum of Narrative Art – Theater, *Chicago, IL*

## **SCULPTURES/INSTALLATIONS**

John E. Bannon – The Test of Time, *Rowan University, Glassboro, NJ*

La Belle Exhibition, Bullock Texas State History Museum, *Austin, TX*

## **AVIATION/TRANSPORTATION FACILITIES**

Port Authority Bus Terminal Seismic Upgrade, *New York, NY*

## **HEALTHCARE/LABORATORY FACILITIES**

NYC DEP West of Hudson Headquarters, *Kingston, NY*

Kimmel Pavilion, NYU Langone Medical Center, *New York, NY*

## **SPORTS FACILITIES**

Chicago Olympic Aquatics Center Concept Design, *Chicago, IL*



# STEPHEN J. PFUND, P.E.

## Associate

As Project Manager, Mr. Pfund provides detailed guidance on the analysis and development of the structural design and coordinates structural engineering services with the Owner, Architect, Services Engineer and Contractor. He works closely with LERA's Project Director and Partner-in-Charge and with the staff of other firms.

### PROFESSIONAL EXPERIENCE

LERA Consulting Structural Engineers  
2012 to Present

### REGISTRATION

Professional Engineer – NY

### EDUCATION

Pennsylvania State University  
M.S. Architectural Engineering, 2012

Pennsylvania State University  
B. Architectural Engineering, 2011

### HONORS & ACTIVITIES

Phi Alpha Epsilon AE Honor Society

Robert McNamara AE Scholarship

Louis and Judy Geschwinder Endowed  
Scholarship

Class of 1975 AE Scholarship

BIM Thesis Winning Thesis Award

### INVESTIGATIONS

Embassy Building, *Central Asia*

Embassy Building, *Europe*

Hotel and Condominium Tower, *North America*

Residential Structure, *North America*

Airport, *North America*

Hospital, *North America*

Concrete Pool, *North America*

### GOVERNMENT

U.S. New Embassy Compound (NEC), *Ankara, Turkey*

### CONVENTION CENTERS

NYS ESD/CCOC, Jacob K. Javits Convention Center Renovation & Expansion, *New York, NY*

### RENOVATIONS

NYC EDC, Brooklyn Army Terminal – Phase V Renovation, *Brooklyn, NY*

NYU Lutheran Augustana Center – Parking Structure, *Brooklyn, NY*

NYC ACS, Union Hall Renovation Feasibility Study, *Jamaica, NY*

### MUSEUMS/CULTURAL FACILITIES

NYS PRHP, National Purple Heart Hall of Honor Expansion, *New Windsor, NY*

### EDUCATION

CUNY Hunter College, Cooperman Library, *New York, NY*

CUNY Medgar Evers College, Carroll Street Building Renovation, *Brooklyn, NY*

CUNY Kingsborough Community College, Performing Arts Center Renovation, *Brooklyn, NY*

CUNY John Jay College, Club Row Renovation, *New York, NY*

CUNY College of Staten Island, Center for Big Data Business Analytics Renovation,  
*Staten Island, NY*

CUNY The Graduate Center, Center for Digital Scholarship & Data Visualization, *New York, NY*

CUNY Macaulay Honors College, New Media Jobs Incubator & Innovation Lab, *New York, NY*

SUNY Downstate, School of Public Health, New Academic Building, *Brooklyn, NY*

Massachusetts College of Art and Design, MassArt Design and Media Center, *Boston, MA*

Columbia University Medical Center, Roy and Diana Vagelos Education Center, *New York, NY*

University of Chicago, Rubenstein Forum, *Chicago, IL*

Brown University, Creative Arts Center Entrance Canopy, *Providence, RI*

### HEALTHCARE

NYU Langone Health, Kimmel Pavilion, *New York, NY*

NYU Langone Health, Energy Building, *New York, NY*

NYU Lutheran Augustana Center, Expanded Feasibility Study, *Brooklyn, NY*

### MASTER PLANNING/FEASIBILITY STUDIES

Manhattan Courts Master Plan: Phase III, NYC OMB, *New York, NY*

NYU Lutheran Augustana Center, Expanded Feasibility Study, *Brooklyn, NY*

### COMPETITIONS

Duck-Work, Winner, Timber New England Design and Fabrication,  
Boston Society of Architecture, *Boston, MA*

CANstruction, *New York, NY*

2015 to Present, Team Member

2014, Captain, Winner Jurors' Favorite (NY & International)

2013, Captain, Winner Jurors' Favorite (NY) &

Founder's Memorial Award (Int'l)

2012, Team Member, Winner Jurors' Favorite (NY)

# LERA

**FORENSIC ENGINEERING AND LOSS CONSULTING**



# LERA Consulting Structural Engineers

## REPRESENTATIVE FORENSIC INVESTIGATIONS

### Condominium Tower, Southwestern United States

LERA was retained to investigate and provide expert testimony in a matter involving design and construction defects discovered in a 50-story reinforced concrete hotel and condominium tower with post-tensioned concrete floors. LERA was able to identify how combinations of design, construction methodology, and construction detailing decisions led to deviations and structural deficiencies.

### Condominium Tower, North America

LERA was retained to investigate the cause of a precast concrete curtainwall collapse at a 70-story condominium building under construction.

### High-Rise Residential Building, Northeastern United States

LERA was retained to investigate and provide expert testimony in a matter involving concrete balconies on a high-rise building in the Northeastern United States and to determine the root causes of concrete cracking and spalling.

### KL Sentral 348, Kuala Lumpur, Malaysia

LERA provided guidance on the damage assessment, structural evaluation and repair program for a 33-story concrete office building that was fire damaged while still under construction. LERA provided expedited emergency services to the developer with an emphasis on maintaining structural integrity and compliance with local and international building codes. Construction resumed shortly thereafter and the buildings achieved their intended height and function.

### High-Rise Residential Building, North America

LERA was retained to investigate and provide repair design in a matter involving building settlement.

### High-Rise Residential Building, North America

LERA was retained to identify the cause of popping and cracking noises from the facade of a tall residential building.

### NIST Investigation of the World Trade Center Collapse, Washington, DC

This project consisted of a 3-year building and fire safety investigation conducted by the National Institute of Standards and Technology (NIST) to study the factors contributing to the probable cause (or causes) of post-impact collapse of the WTC Towers (WTC 1 and 2) and WTC 7. LERA's role included the development and analysis of reference structural analysis models for each tower, as well as the development of structural databases of the primary components of the WTC 1 and WTC 2 towers, including the subgrade level.



Chek Lap Kok Airport, Hong Kong



Condominium Tower



Aura Tower

#### Marriott Marquis Hotel, New York, NY

LERA conducted an investigation of the truss erection and erection bracing at this hotel, and provided expert witness testimony.

#### High-Rise Condominium, Miami, FL

LERA reviewed the structural design of an occupied 30-story condominium and associated parking structure and designed repairs to strengthen deficiencies in the existing structure.

#### World Trade Center 9/11 Insurance Litigation, New York, NY

LERA provided investigative and structural modeling services related to the question of whether the September 11, 2001 terrorist attacks constituted one or two occurrences.

#### Major US Airport, United States

LERA was retained to investigate root causes of the premature deterioration of a 2.5-mile-long runway at a major US Airport. Conditions included concrete cracking, scaling, cement wash and spalling. The investigation involved the review of design documents, concrete mix designs and construction procedures.

#### Wembley Arena, United Kingdom

LERA provided expert witness and construction engineering services on behalf of the contractor for a sports and entertainment stadium with a retractable roof. Our services included a review of the adequacy of construction documents for the structure and construction sequence, as well as an investigation into the reasons for changes to construction documents.

#### IBM Office Building, Sterling Forest, NY

This project consisted of the investigation of concrete slab cracks in this suburban office building.

#### Two Tequesta Point Re-Design, Miami, FL

LERA was retained by Swire Properties to review the design of a 40-story residential project under construction in Miami, FL and re-design portions of the project. LERA's review and re-design were completed on a fast-track schedule, thus minimizing delays to the project's original schedule.

#### Two Liberty Place, Philadelphia, PA

LERA provided expert witness testimony for and investigated the metal deck edge form, truss connections, column shortening, curtainwall-to-structure connections and steel connections of this high-rise office building.

#### Citicorp Center, New York, NY

LERA was retained by Citibank to lead the design of structural repairs required to correct the design deficiencies of this high-rise building.

#### John Hancock Tower, Boston, MA

This project consisted of an investigation of building sway and lateral stability, and included a friend-of-the-court opinion paper.



Two Tequesta Point Redesign, Miami, FL



Two Liberty Place, Philadelphia, PA



Convention Center Expansion, Chicago, IL

140 Broadway, New York, NY

LERA investigated the feasibility of repairing curtain wall supports at an existing 40-story building.

Chrysler Building, New York, NY

The project consisted of repairs to the cladding of this landmark building.

High-Rise Apartment Building, Miami, FL

LERA reviewed the structural design of an occupied 25-story apartment building and associated parking structure. A wind tunnel study was accomplished to demonstrate the adequacy of the existing structure.

Espirito Santo Plaza, Miami, FL

LERA assessed damage to the structure and curtain wall of this office building following Hurricane Wilma.

Pirelli Armstrong Tire Co., New Haven, CT

This project consisted of the investigation of concrete slab cracks.

Chek Lap Kok Airport Terminal Roof Structure Evaluation, Hong Kong

This project consisted of the evaluation, on behalf of the contractor, of constructability issues relating to the structural steel of the new terminal's 14 million-sf (1.3 million-sm) roof structure, composed of large, prefabricated structural steel panels. Constructability issues revolved around the tolerances associated with roof panel fabrication, assembly and erection.

C&D Building Settlement Investigation, Bellevue Hospital Center, New York, NY

This existing 8-story building, constructed in the 1910s, experienced significant settlement caused by the construction of an adjacent building. LERA assessed damage to the structural frame and provided peer review services for the design of repairs.

Northshore Health Systems Facilities, Long Island, NY

This project consisted of the investigation of a window-washing support mechanism failure and included the design of measures to correct a design deficiency.

Federal Reserve Bank, Minneapolis, MN

For this project, LERA evaluated issues associated with the curtain wall, air leakage between floors and fireproofing.

World Trade Center Post Bombing Repairs, New York, NY

This project consisted of the investigation of the structure following the 1993 bombing, and the demolition, shoring and repairs to the damaged areas. LERA also provided expert witness testimony for the investigation.

World Trade Center 9/11 Rescue and Recovery Effort, New York, NY

This work consisted of volunteer services to assist government agencies and recovery contractors in searching the buildings and subgrade structures, removing debris and securing damaged structures and foundation elements.



Chrysler Building, New York, NY



Citicorp Center, New York, NY



Port Regalle Condominiums, Staten Island, NY

#### Convention Center Expansion, Chicago, IL

LERA was retained to review a contractor's claim for extra costs and provide opinion and expert witness testimony regarding the validity of said claim, which included material costs, fabrication costs, erection costs, detailing costs, overtime, loss of efficiency, disruption and miscellaneous other costs for a variety of drawing revisions, clarifications, RFI's, and more.

#### Embassy, North America

LERA reviewed the structural design of this government facility and evaluated structural issues related to delays that were encountered during construction. Our services included expert witness testimony on behalf of the owner at a deposition.

#### Continental Airlines Arena, East Rutherford, NJ

LERA has provided services to the New Jersey Sports and Exposition Authority for numerous projects at the Continental Arena, including investigations of truss damage, roof loading imposed by rigging loads and terrazzo cracks. LERA also performed a vibration study of the arena seating areas.

#### Highway Study, North America

LERA reviewed the structural design of components involved in the collapse of a portion of a highway structure. Our services included engineering investigations and assistance to attorneys preparing arguments.

#### Port Regalle Condominiums, Staten Island, NY

LERA was retained by an adjuster to investigate the extent of damage to this waterfront condominium complex resulting from flooding during Hurricane Sandy.

#### Harristown Key Block, Strawberry Square, Harristown, NY

This project consisted of an investigation into the cladding and design for re-cladding over existing ceramic tile-faced precast wall panels with metal panels.

#### Hotel Penta, New York, NY

On behalf of a prospective buyer, LERA surveyed the pre-purchase condition of a load-bearing masonry façade.

#### Rockefeller University, New York, NY

This project consisted of a peer review, investigation and repairs to truss cracks in a dormitory building.



Espirito Santo Plaza, Miami, FL



Wembley Arena, United Kingdom



Marriott Marquis Hotel, New York, NY

[Meridian Plaza](#), Philadelphia, PA

For this project, LERA conducted a preliminary investigation of fire damage and provided a review of repairs.

[GPU Tank](#), Parsippany, NJ

This project consisted of an investigation of water tank cracks.

[Whitehead Residence](#), New York, NY

This project consisted of the monitoring of roadway construction along a major highway. Our firm was retained as an advisor to the owner of a private residence adjacent to the thoroughfare.

[Log Framed House](#), Upstate New York, NY

LERA investigated cracking wood logs in a private residence.

[Condo Building](#), New York, NY

LERA was retained to investigate a building over the Riverside Drive.

# LEERA

**DESIGN PROJECTS**



# SHANGHAI WORLD FINANCIAL CENTER

Shanghai, China



The Shanghai World Financial Center is a national icon symbolizing China's prominence in the global market. Centrally located in the Pudong District of Shanghai, the mixed-use tower contains office, trading, hotel, museum and retail space. The podium level enlivens the streetscape and engages passersby.

LERA first performed an alternative structural design for a contractor of this 1,509-ft (460-m) tall building in 1997. When the developer, Mori Building Company, elected to construct an even taller building at 1,614-ft (492 meters) on the existing foundations, with 16% more floor area, others were unable to provide a design to match their ambition. LERA, however, developed a new structural system that decreased the amount of steel and concrete and provided enhanced reliability and robustness, all while speeding up construction and reducing costs in both structural and non-structural systems.

SWFC won Best Tall Building in the World in 2008 from The Council on Tall Buildings and Urban Habitat (CTBUH), with the jury stating, "The structure is nothing short of genius."

**Construction Cost** \$1.3 billion

**Completion Date** 2008

**Owner**

Mori Building Company

**Architect**

Kohn Pedersen Fox Associates

**Awards**

Excellence in Structural Engineering Award, 2009  
National Council of Structural Engineers  
Associations (NCSEA)

Diamond Award for Engineering Excellence, 2009  
American Council of Engineering Companies New  
York (ACEC NY)

Overall Best Tall Building in the World, 2008  
Best Tall Building - Asia & Australasia, 2008  
Council on Tall Buildings and Urban Habitat  
(CTBUH)

LERA

# LOTTE WORLD TOWER

Seoul, South Korea



At 555 m (1,820 ft) tall, the 123-story Lotte World Tower became the fifth tallest building in the world upon completion. The \$2.5 billion tower and adjacent development, totaling 505,300-gsm (5.4 million-gsf), features a variety of usages, including office, retail, hotel, officetel, museum and observation space.

The tower's elegant tapered shape is a nod to traditional Korean art forms. Though it led to challenging structural complexities, it was effective at minimizing wind loads. LERA worked closely with the architects to strike a balance between the structural efficiency gained by adding columns and the need to preserve open floor plans. The result is a system of eight concrete mega-columns with long-span spandrels between them—up to 24.5 m (80 ft)—along with concrete core walls, outriggers and belt trusses.

<b>Construction Cost</b>	\$2.5 billion
<b>Completion Date</b>	2016

**Owner**  
Lotte Group

**Architect**  
Kohn Pedersen Fox Associates



LERA

# 4 WORLD TRADE CENTER

New York, NY



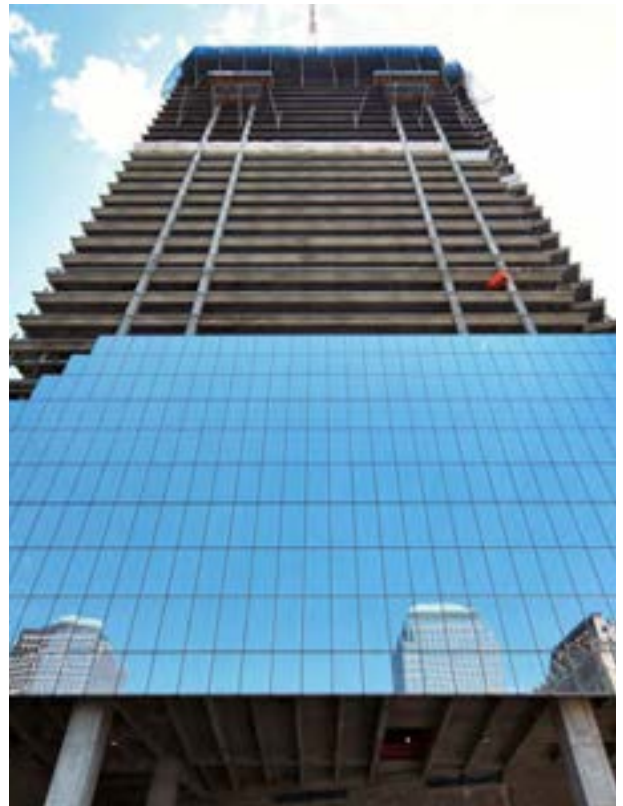
In November 2013, 4 World Trade Center became the first tower to open on the original 16-acre World Trade Center site, 12 years after the September 11 attacks. LERA worked closely with the owner and architects to realize their vision of a building that maintains a quiet, dignified presence while offering stunning, clear views of the cityscape. The LEED Gold-certified office tower is positioned above a retail podium over below-grade parking.

4 WTC is 977 ft (298 m) tall, with a gross above-grade area of 2.3 million sf (213,700 sm). The building features column-free corners, 80-ft clear main spans and 20- to 45-ft cantilevers around the perimeter, accomplished by the use of only four perimeter columns per side, which pass seamlessly into a complex below-grade program.

**Completion Date** 2013 (Tower)  
2016 (Retail & Dining)

**Owner**  
Silverstein Properties

**Architect**  
Maki & Associates – Design Architect  
Adamson Associates – Executive Architect



LERA

# LODHA WORLD TOWERS

Mumbai, India



The Lodha World Towers is an 80-story, 8 million-sf residential development composed of three luxury high-rise residential buildings, and podium structure with parking, amenities, and retail.

The tallest towers rise to 280-m (919-ft). The development also features a grand entrance gateway, the largest in India, a 15-m (49-ft) bridge-like arch that spans 50 m (164 ft).

LERA provided full scope of services for this project.

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	2020

## Owner

Lodha Realty

## Architect

Pei Cobb Freed & Partners



LERA

# 2050 M STREET

Washington, D.C.



LERA led the structural design of this 450,000-sf (41,806-sm) office building in Washington, D.C. Home to CBS's Washington Bureau (complete with television studios), among other premier tenants, the building's design combines the traditional typology of D.C. office buildings with an all-glass curtain wall made of curved floor-to-ceiling panels that maximize transparency and yield panoramic, column-free views of the city's "Golden Triangle" business district.

The 900 identical insulated-glass panels that compose the façade are curved through a heat roller tempering process and are structurally efficient, meeting wind load requirements and enabling a thinner monolithic outer lite than normal, thus enhancing transparency.

Each perimeter column is pulled in 12 ft from the façade, with the ceiling of each floor tapered to the depth of the structural slab at the exterior, further emphasizing the permeability of the building.

**Construction Cost** N/A  
**Completion Date** 2019

**Owner**  
Tishman Speyer

**Architects**  
REX (Design Architect)  
Kendall/Heaton (Executive Architect)



LERA

# BITEXCO FINANCIAL TOWER

Ho Chi Minh City, Vietnam



The shape of Bitexco Financial Tower is modeled after a lotus flower bud, the national flower of Vietnam and an emblem of the country's emergence in the global community of trade, business and commerce.

LERA was the structural engineer for this 68-story, 870-ft (265-m) office tower and podium with a gross construction area of approximately 1,230,000 sf (114,000 sm). The tower contains four levels of parking below grade. Site constraints proved to be particularly challenging, as the tower is sited on the alluvial plain terminating the Mekong River delta, leading to difficult soil conditions. In response, LERA devised an effective concrete structural system that achieved the necessary slenderness required by the constraints.

Top down techniques were used to expedite the podium construction, and the tower foundations extend more than 295 ft (90 m) below ground to work with the site's poor soil conditions. An extensive pile load test program was required at the start of construction to verify the foundation capacity.



**Construction Cost**     \$80 million  
**Completion Date**     2010

**Owner**  
Bitexco Group of Companies

**Architect**  
Carlos Zapata Studio – Design Architect  
AREP Ville – Associate Architect

LERA

# BANK OF CHINA TOWER

Hong Kong, China



The Bank of China is a dramatic display of geometric form, an example of architecture and structural engineering seamlessly blended together. Envisioned by architect I.M. Pei as a “cube rising out of the ground diagonally divided into quadrants,” the tower is internationally recognized for its iconic design.

LERA led the structural design of the 1.4 million-sf (131,000-sm), 1,205-ft (367-m), 70-story office tower containing two levels of underground parking. Constructed on a tightly constrained, urban site framed by highways, the design solution called for a slender tower design. At the time of completion, the Bank of China was the world’s tallest building outside of New York and Chicago, and the fifth tallest in the world.

**Construction Cost** \$420 million

**Completion Date** 1988

**Owner**

Sun Chung Building Management

**Architect**

Pei Cobb Freed & Partners

# HERMITAGE PLAZA

Courbevoie, France



LERA is the structural engineer for a 3.4 million-sf (310,000-sm) mixed-use development located on the bank of the Seine River in Paris, France. The program combines residential, hotel, office, retail and parking uses. The central feature of the project is a pair of high-rise towers that each reach a height of 1,060 ft (323 m). A third building, rising to 174 ft (53 m) above grade, is dedicated to office space. The three buildings sit on a common retail and parking podium extending several levels below grade.

**Construction Cost** Not Available  
**Completion Date** Concept Design

**Owner**  
Hermitage Immobilier

**Architect**  
Foster + Partners



LERA

# THE STANDARD, EAST VILLAGE

New York, NY



LERA was the structural engineer for this 21-story, 145-room glass-and-steel hotel with a gross area of approximately 100,000 sf (9,300 sm), including two full basements. Clad in an aluminum and fritted glass curtain wall and tightly situated between an existing bar and tenement building, the building billows outward as it rises, giving it a dynamic sculptural form.

**Construction Cost** \$45 million  
**Completion Date** 2009

**Owner**  
Lounge Sleep

**Architect**  
Carlos Zapata Studio



LERA

# ESPIRITO SANTO PLAZA

Miami, FL



Located in the heart of Miami's international financial district, Espirito Santo Plaza's front façade, with its sloping face and graceful parabolic arch, is a well known feature of the Miami skyline. The geometry of the high arch is created by the intersection of the vertical concave surface inside the arch with the inclined plane around it. Inside the tower, a 10-story-high atrium is enclosed with a steel framed skylight and a 60-ft-wide by 110-ft-high steel framed glass wall.

The building's mixed-use program is split into thirds: the bottom third contains office space, the middle third offers hotel space and the top third houses luxury apartments. The 755,000-sf, 37-story glass tower is linked to an adjacent 13-story parking garage by an 80-ft by 120-ft steel framed glass canopy and a first-floor pedestrian bridge.

The 500,000-sf (46,400-sm) parking garage contains a fitness and health club at roof level that includes tennis courts and a swimming pool. The glass canopy is supported along its centerline and cantilevers 50 feet in each direction. Its connections to the two buildings are detailed to allow the tower and garage to move independently of each other.

**Construction Cost** \$105 million  
**Completion Date** 2003

**Owner**  
Estoril, Inc.

**Architect**  
Kohn Pedersen Fox Associates



LERA

# SCHUYLKILL YARDS MIXED-USE DEVELOPMENT

Philadelphia, PA



LERA is the structural engineer for Phase I of Schuylkill Yards, a new large-scale, multi-building mixed-use development located directly adjacent to 30th Street Station in Philadelphia, PA. The 14-acre development will create 6.9 million sf of office, laboratory, residential, retail, hotel and public green space. The Sky West (gray) tower includes a 20-story residential building (featuring amenities such as a pool, a gym and more) over an 8-story mixed program of lab/office and retail, which sits over two levels of parking. The Sky East (red) tower includes a 30-story office building over retail.



**Construction Cost**  
**Completion Date**

Not Available  
Active

## Owner

Brandywine Realty Trust;  
Drexel University

## Architect

PAU – Design Architect;  
HDR – Executive Architect;  
CetraRuddy – Residential Architect for Sky West



LERA

# THREE SIXTY WEST, WORLI

Mumbai, India



LERA is the structural engineer for a 92-story, 303-m (994-ft) residential tower and a 66-story mixed-use tower, totalling approximately 425,000 sm (4,574,000 sf). The two towers will be supported by a 4-story podium and four basement levels. The smaller tower will house the new Ritz-Carlton, Mumbai, containing 221 rooms, two fine dining restaurants, an ocean view bar, a spa and expansive banquet spaces. LERA is providing full scope of structural engineering services for this project, from Schematic Design through Construction Administration.

**Completion Date** Under Construction

**Owner**  
Oberoi Realty

**Architect**  
Kohn Pedersen Fox Associates



LERA

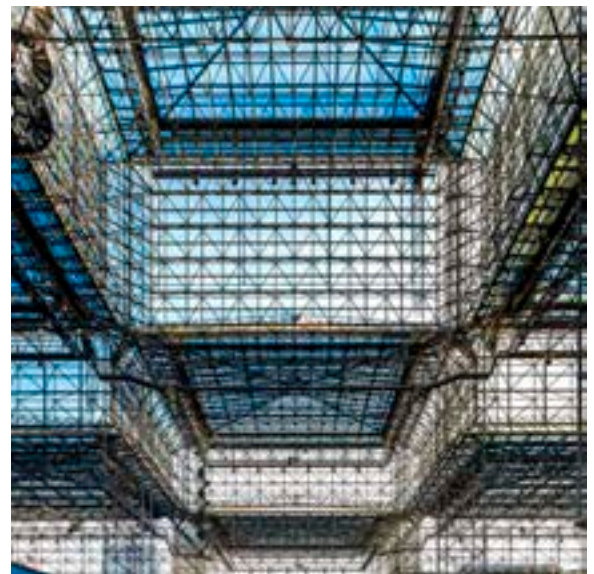
# JACOB K. JAVITS CONVENTION CENTER RENOVATION & EXPANSION

New York, NY



LERA was the structural engineer for the renovation of the Javits Convention Center, as well as the design of a proposed expansion that would grow the facility from 1.9 million sf to 6 million sf. Designs for upgrades and potential expansion had to accommodate active railway and transit lines running beneath the site. LERA provided the Design Development bridging documents for the Design-Build RFP issued by New York State for this project.

As part of the scope of work, several feasibility studies were conducted. Development potential was analyzed for the convention center site and adjacent sites owned by the client and other municipal stakeholders, including mixed-use, retail and waterfront schemes. The renovation included the creation of new entrances and the recladding of the entire building enclosure with a new high-performance curtain-wall and skylights, as well as the addition of a new 6.75-acre green roof that retains 72% of rainfall. LERA also provided structural designs for a new truck marshalling facility that will house loading docks and parking for show trucks and trailers, featuring 40-, 60- and 90-ft long spans.



<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	2014 (renovation); Active (expansion)

**Owner**  
NY Convention Center Operating Corporation (CCOC);  
Empire State Development (ESD)

**Architect**  
FXFowle Epstein

LERA

# NEWSEUM AND FREEDOM FORUM

Washington, DC



A monument to journalism and free speech, the 650,000-sf (60,000-sm) Newseum and Freedom Forum features a 2-story media wall and a glass façade, reflecting the principles of honesty and transparency. A defining 4,500-sf (420-sm) tension cable window wall and monumental stair was realized through LERA's design of a unique truss system. Four below-grade levels are built with reinforced concrete, and a 16-in-thick foundation retains soil at the building's perimeter. In addition to gallery, office and retail space, the 7-story museum houses the 500-seat Annenberg Theater, which hosts both film screenings and lectures, panels and presentations, as well as the Knight TV Studio, a 2,800-sf technologically advanced black box broadcasting facility that seats up to 150 audience members.



**Construction Cost**      \$230 million  
**Completion Date**      2008

**Owner**  
Freedom Forum

**Architect**  
Ennead Architects



LERA

# NASCAR HALL OF FAME AND MUSEUM

Charlotte, NC



The design for the 175,000-sf (16,250-sm) NASCAR Hall of Fame and Museum mirrors the sinuous shape of a racetrack, creating a dynamic architectural form and space for visitors. LERA devised a complex structural system employing curved and sloped forms as motifs to house the project's Great Hall and related exhibits. Long-span roof trusses spanning 175 ft enable the extra-large Ballroom to be column-free, while 2- and 3-story trusses cantilever 30 ft over the broadcast studio.

A distinctive architectural feature of the museum is its stainless steel façade, which twists like a mobius strip to create a unique canopy spanning 110 ft (33.5 m) over the main entrance.

The complex totals five acres in all, with the museum as its centerpiece, in addition to a 19-story office tower, a 102,000-sf (9,500-sm) expansion to the Charlotte Convention Center, a 100-ft-long bi-level pedestrian bridge connecting the Ballroom to the existing Convention Center, a 12,000-sf black box production center and a post-tensioned concrete parking garage located beneath the Ballroom that can accommodate up to 1,000 cars.

**Construction Cost** \$200 million  
**Completion Date** 2010

**Owner**  
City of Charlotte

**Architect**  
Pei Cobb Freed & Partners



LERA

# WILLIAM JEFFERSON CLINTON PRESIDENTIAL LIBRARY & MUSEUM

Little Rock, AR



In response to President Clinton's desire to "put things in the light," the 165,000-sf (15,000-sm) William Jefferson Clinton Presidential Library & Museum was designed to be a vibrant place, accessible, highly visible and mutable. The main building takes the form of a glass bridge symbolizing President Clinton's theme of "Building a Bridge to the 21st Century."

The LEED Silver museum houses archive and exhibit spaces, as well as the Clinton Foundation Headquarters. The site includes the University of Arkansas Clinton School of Public Service and a 28-acre recreational park. At the center of the project is the Bridge (Museum) Building, which serves as a library that houses exhibits that are dedicated to Mr. Clinton's presidency and personal life. The 420-ft (130-m) long glass-enclosed Museum Building hovers above the ground while cantilevering out 90 ft (27 m) at both ends. The building's transparency and daylighted spaces are designed to open and inviting to the public.

**Construction Cost**      \$90 million  
**Completion Date**        2004

**Owner**  
Clinton Presidential Foundation

**Architect**  
Ennead Architects



LER A

# ROCK & ROLL HALL OF FAME AND MUSEUM

Cleveland, OH



Designed for lake ice loading, the 143,000-sf (13,000-sm) Rock and Roll Hall of Fame and Museum contains exhibition space, a cantilevered auditorium, a disc jockey booth, office space, a museum shop, a café and outdoor terrace and a public plaza. LERA led the structural design of the new museum.

This facility combines geometric forms and cantilevered spaces, including 50,000 sf (4,600 sm) of exhibition space beneath a soaring “glass tent” spanning 260 ft (80-m) that engages an 8-story, 165-ft.(50-m) tower containing the Hall of Fame. This project was completed on a fast-track schedule.

On the lakeside, the tower meets the water, requiring construction of concrete caps poured over steel piles that extend into the bedrock. The 125-seat theater cantilevers 65 ft out from the tower over the surface of Lake Erie, 60 ft above the lake surface.

**Construction Cost**      \$85 million  
**Completion Date**      1995

**Owner**  
The Rock & Roll Hall of Fame Foundation

**Architect**  
Pei Cobb Freed & Partners



LERA

# MUSEUM OF ISLAMIC ART

Doha, Qatar



LERA was the structural engineer for a new 340,000-sf (31,500-sm) museum, dramatically sited in Doha Bay and housing an important collection of Islamic art. Composed of architecturally exposed concrete, the museum consists of two distinct structures: a Ramp and Garage Building on land, and the Museum Building offshore. The two structures are connected by a double-deck vehicular bridge. The complex contains five separate bridges. The double-deck vehicular bridge, along with a singular pedestrian bridge—both consisting of cast-in-situ tapered sections of architectural concrete—provide the sole means of access to the museum. Inside the facility, three 72-ft (22m) metal-and-glass pedestrian bridges span the central atrium. In total, the bridges span 203-ft (62-m).

LERA was also involved in various work for the surrounding park. The construction of the island supporting the museum posed a number of challenges. The island was to be built in the corrosive salt waters of the Arabian Gulf; it had to provide safe and adequate foundations for the museum; and stone clad walls needed to emerge vertically out of the water with very tight tolerances on the stone mounting. The solution was the use of precast pre-stressed concrete sheet piles to form the island walls, which provided good corrosion resistance and water tightness, as well as a relatively smooth wall surface onto which the heavy cove stones could be mounted with sufficiently tight tolerances.

**Construction Cost**     \$150 million  
**Completion Date**     2008

**Owner**  
Qatar Museums Authority

**Architect**  
I.M. Pei in association with Pei Partnership



LERA

# COLUMBIA UNIVERSITY MEDICAL CENTER ROY AND DIANA VAGELOS EDUCATION CENTER

New York, NY



LERA led the structural design and performed special inspections for this new 15-story, 107,000-sf (9,945-sm) medical education building that features a "Study Cascade," a vertical campus of stacked neighborhoods composed of post-tensioned, cantilevered concrete slabs. The structural system leverages natural interconnections that come from the unique arrangement of the program spaces: single-story walls and ramps connect and stiffen the cantilevered slabs, reducing post-tensioning, rebar and concrete quantities. The building stands as a nearly identical realization of the architects' vision—rarely does a completed building so accurately reflect its original renderings.

**Construction Cost** \$77 million  
**Completion Date** 2016

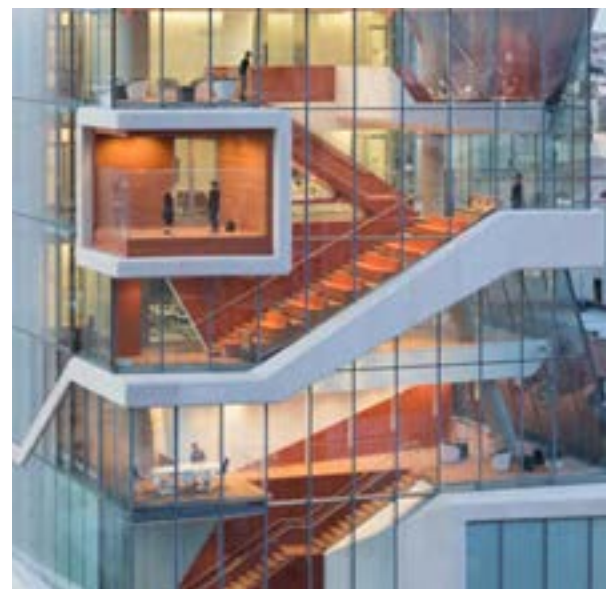
**Architect**  
Diller Scofidio + Renfro – Lead Designer  
Gensler – Executive Architect

**Awards**  
Best in Competition & Architecture Honor Award, 2017  
American Institute of Architecture NY Design Awards

Award of Merit, 2017  
Post-Tensioning Institute Awards

Best of Design Award – Facade, 2016  
Architect's Newspaper Best of Design Awards

Excellence in Structural Engineering Award, 2015  
National Council of Structural Engineers Associations &  
Structural Engineers Association of New York



LERA

# SUNY WESTCHESTER COMMUNITY COLLEGE GATEWAY CENTER

Valhalla, NY



LERA was the structural engineer for this new home for business and multilingual programs, as well as the Professional Development Center, creating new, dynamic opportunities for student growth and collaboration.

The 70,000-sf (6,500-sm) LEED Gold complex consists of three new buildings. The Gateway, a large and open volume serving as a lobby, is flanked by two buildings containing classrooms, offices, an auditorium, a student lounge and a cafeteria. The Gateway's unique structural design features architecturally-exposed, stackable steel "boxes," which were prefabricated and bolted together on site.

A steel bridge crosses the Gateway, linking the three buildings. The site is further distinguished by a 65-ft (20-m) steel tower, which is lit at night to act as a campus beacon.



**Construction Cost**     \$33 million  
**Completion Date**     2010

**Owner**  
State University of New York; Westchester Community College

**Architect**  
Ennead Architects

**Awards**  
National Winner, AISC IDEAS<sup>2</sup> Award (2011)  
Excellence in Structural Engineering, SEAoNY (2011)



LERA

# SCHEIN RESIDENCE

Woodstock, NY



LERA was the structural engineer for a 4,500-sf (420-sm) private residence in the scenic overlay district in the town of Woodstock. The residence also includes a 1,500-sf (460-m) garage, a studio building and a pool.

**Construction Cost**  
**Completion Date**

Not Available  
2012

**Owner**  
Confidential

**Architect**  
Barry Price Architecture



LERA

# SHELTER ISLAND RESIDENCE

Shelter Island, NY



LERA was the structural engineer for this 2,800-sf (854-sm) beachfront home, composed of a timber-and-glass box balanced on a concrete base with cantilevers of up to 13 ft on four sides and featuring 6-ft by 14-ft (2-m by 4-m) solid cypress timbers with details inspired by classical Japanese architecture.

**Construction Cost** Not Available  
**Completion Date** 2008

**Owner**  
Confidential

**Architect**  
Tamarkin Co. – Project Manager  
CT Architect P.C. – Design Architect



LERA

# PRADA SOHO

New York, NY



LERA was the structural engineer for the renovation of two floors of the former Guggenheim – SoHo museum into an upscale retail establishment. A key feature of this ground-breaking project includes large, flexible open space that doubles as event space for special programs and cultural events.

LERA devised an innovative bracing system using composite cast-iron steel and concrete columns cantilevering off of the existing 1890's brick foundation pier to help create the open space. By scooping out the ground floor and opening it up to the basement level, the foundation level was jacked-up to the ground level. This work included removing some columns. LERA designed a new glass elevator and a feature stair that serves as seating for the performance space. LERA also designed bracing systems to support floating display cases.

**Construction Cost** \$15 million

**Completion Date** 2002

**Owner**

Prada USA Corp.

**Architect**

Office of Metropolitan Architecture  
in Association with Architecture Research Office



LERA

# MORIMOTO RESTAURANT

New York, NY



LERA was the structural engineer for a tenant renovation for a 13,000-sf (1,200-sm) upscale restaurant located on two levels in Manhattan's Chelsea Market. The facility is punctuated by remnants of the High Line elevated railway, referencing the site's prior use as a food manufacturing center. Architecturally exposed concrete, a signature element of Tadao Ando's work, is dramatically visible in a series of concrete columns and a floating stair. The space is further defined by a static "waterwall," a steel curtain holding nearly 20,000 illuminated bottles of water.

**Construction Cost** \$12 million

**Completion Date** 2006

## Owner

Starr Restaurant Organization

## Architect

Tadao Ando – Design Architect,  
in collaboration with Goto Design Group



LERA

# PUBLIC FARM ONE

Long Island City, NY



LERA provided the structural design of this interactive, working farm sited at the P.S.1 Contemporary Art Center. The design, which explores the use of sustainable and recyclable materials in a temporal space, was selected as the winning entry in the museum's Young Architects Program. Cardboard tubes were used as the primary building material, resulting in an expression of thoroughly integrated architecture and structure.

**Construction Cost** Not Available  
**Completion Date** 2008

**Owner**  
MoMA / P.S.1 Contemporary Art Center

**Architect**  
WORK Architecture Company

**Awards**  
Platinum Award, 2009  
ACEC NY Excellence in Engineering Awards

New York Construction Merit Award – Park/Landscape, 2008  
SEAoNY Best of 2008 Awards



LERA

# LEERA

PEER REVIEWS



# 1 WORLD TRADE CENTER FREEDOM TOWER

## Peer Review

New York, NY



LERA provided peer review services for the 104-story, 1,776-ft (540-m) tall Freedom Tower, whose program includes 2.6 million-sf (240,000-sm) of office space, as well as an observation deck, world-class restaurants, parking and broadcast and antennae facilities, all supported by both above- and below-grade mechanical infrastructure for the building and its adjacent public spaces. Below-grade tenant parking and storage, shopping and access to the PATH and subway trains and the World Financial Center are also provided.

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	2014

**Owner**  
Silverstein Properties

**Architect**  
Skidmore, Owings & Merrill and  
Studio Daniel Libeskind

# 2 WORLD TRADE CENTER

## Peer Review

New York, NY



LERA provided peer review services for the developer of this 88-story, 1,349-ft (411-m) mixed-use tower, which will include 3.1 million sf (290,000 sm) of office space and five levels of retail.

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	Not Available

**Owner**  
Silverstein Properties

**Architect**  
Foster + Partners

# 2 WORLD TRADE CENTER

## Peer Review

New York, NY



LERA provided peer review services for this 80-story, 1,340-ft (408-m) tower, which will contain 2.8 million-sf (260,000-sm) of office and retail space. The tower will have setbacks totalling 38,000 sf (3,530 sm), creating lush terraces that will offer expansive views of the city. Large stairwells between the floors form cascading, double-height communal spaces throughout the building.

**Construction Cost**

Not Available

**Completion Date**

Under Construction

**Owner**

Silverstein Properties

**Architect**

Bjarke Ingels Group (BIG)

# 3 WORLD TRADE CENTER

## Peer Review

New York, NY



Directly adjacent to 4 World Trade Center—for which LERA was the structural engineer—LERA provided peer review services for this 80-story, 1,170-ft (356-m) tower, which includes 2.8 million sf (260,000 sm) of office space and five retail levels.

**Construction Cost** Not Available  
**Completion Date** 2018

**Owner**  
Silverstein Properties

**Architect**  
Rogers Stirk Harbour + Partners

# 7 WORLD TRADE CENTER

## Peer Review

New York, NY



LERA provided value engineering and peer review services for the Owner of this 2 million-sf (185,000-sm) office tower. The 50-story building also houses a Con Edison substation.

LERA's value engineering efforts included the elimination of a hat truss that resulted in total savings of \$5 million.

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	2003

**Owner**  
Silverstein Properties

**Architect**  
Skidmore, Owings & Merrill

# 1 MANHATTAN WEST NE & SE OFFICE TOWER

## Peer Review

New York, NY



LERA provided structural peer review services for this commercial development in midtown Manhattan, consisting of two high-rise towers. The 67-story NE tower contains approximately 2 million sf of office space, while the 63-story SE tower has a total floor area of approximately 1.5 million sf.

The towers are located immediately adjacent to the train tracks serving Penn Station.

**Completion Date** Under Construction

**Owner**  
Brookfield Properties

**Architect**  
SOM



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# AOL TIME WARNER CENTER

## Peer Review

New York, NY



LERA provided value engineering and peer review services for the developer of this 2.7 million-sf (250,900-sm) mixed-use complex consisting of two 52-story hotel and residential towers; an 8-story podium containing restaurants, retail space and Jazz @ Lincoln Center, a 1,200-seat jazz performance, rehearsal and education facility; 380,000 sf (35,000 sm) of television production studios; and parking for 225 cars below grade.

LERA's value engineering efforts included a column re-design that resulted in total savings of \$10 million.

**Construction Cost** \$1.7 billion

**Completion Date** 2004

**Owner**

Columbus Centre, LLC

**Architect**

Skidmore, Owings & Merrill

# 15 HUDSON YARDS

## Peer Review & Value Engineering

New York, NY



LERA provided structural peer review and value engineering services for this 800,000-sf (74,000-sm) residential tower, located in the fast-growing Hudson Yards development in Manhattan, part of a plan to redevelop the Metropolitan Transportation Authority's West Side Yards.

**Completion Date** 2019

**Owner**

The Related Companies

**Architect**

Diller Scofidio + Renfro – Lead Architect

Ismael Leyva Architects – Executive Architect



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# MIDTOWN EAST QUEENS

## Peer Review

Long Island City, NY



LERA provided peer review services for this 4.2 million-sf (390,000-sm) mixed-use development, consisting of a trio of crystalline-shaped towers.

**Construction Cost** \$1.4 billion  
**Completion Date** Active

**Owner**  
Tishman Speyer

**Architect**  
MdeAS



# QUEENS PLAZA PARK

## Peer Review

Long Island City, NY



LERA provided peer review services for a new 68-story, 756-ft (230-m) residential tower with a total floor area of approximately 978,000 sf (90,900 sm), part of a mixed-use development that includes retail and office space. Included in the development is the adaptive reuse of the historic Clock Tower building, a land-marked 1927 building that originally housed the Bank of Manhattan.

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	Active

**Owner**  
The Durst Organization

**Architect**  
Handel Architects



# 53 WEST 53<sup>RD</sup> STREET

## Peer Review

New York, NY



LERA is providing peer review services for this super-tall residential tower in midtown Manhattan in New York City. The building, designed by Jean Nouvel, will have a mixed-use program that includes gallery space, condominiums and a restaurant.

**Completion Date**      Active

**Owner**

Hines, Pontiac Land Group  
Goldman Sachs

**Architect**

Jean Nouvel



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# 111 WEST 57<sup>TH</sup> STREET

## Peer Review

New York, NY



LERA provided peer review services for this supertall residential project in midtown Manhattan in New York City. The tower will rise to 1,400 ft (430 m), making it one of the tallest residential buildings in the United States and the world.

Upon completion, the tower will also hold the record as the skinniest skyscraper in the world.

**Completion Date** Under Construction

**Owner**  
JDS Development Group & Property Markets Group

**Architect**  
SHoP Architects



# 225 WEST 57<sup>TH</sup> STREET

## Peer Review

New York, NY



LERA provided peer review services for this 1,550-ft (472-m) luxury residential tower, also known as Central Park Tower.

Upon completion, the tower will become the second tallest building in New York City and the country. The building will also be the tallest by roof height in the United States and the tallest residential building in the world both by roof height and architectural height.

**Completion Date** Under Construction

**Owner**

Extell Development Company

**Architect**

Adrian Smith + Gordon Gill Architecture



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# 432 PARK AVENUE

## Peer Review

New York, NY



LERA provided peer review services for this supertall residential tower, located in midtown Manhattan. With 104 condominium apartments and a height of 1,396 ft (426 m), it is the third tallest building in the United States, and one of the tallest residential buildings in the world.

It is the second tallest building in New York, behind One World Trade Center. When measured by roof height, however, 432 Park Avenue is the tallest building in New York.

**Completion Date** 2015

**Owner**

CIM Group / Macklowe Properties

**Architect**

Rafael Viñoly



# 9 DEKALB

## Peer Review

Brooklyn, NY



LERA provided peer review services for this 73-story-tower, which will be clad in glass and bronze and will house over 500 residential units and a retail podium. With its interlocking hexagonal design and rich materiality of bronze and glass, the tower repeats features and patterns of its historic surroundings in downtown Brooklyn.

<b>Construction Cost</b>	N/A
<b>Completion Date</b>	Active

**Owner**  
The Chetrit Group; JDS Development

**Architect**  
SHoP Architects



# 11 HOYT STREET

## Peer Review

Brooklyn, NY



LERA provided peer review services for this new 620-ft, 770,000-sf condominium tower. 11 Hoyt is designed to provide space for nature and community to thrive, vertically, within the densifying neighborhood of Downtown Brooklyn, transforming its full-block site, formerly a parking garage, into an elevated green podium anchored by a tower with scalloped edges rising above it.

**Construction Cost**

Not Available

**Completion Date**

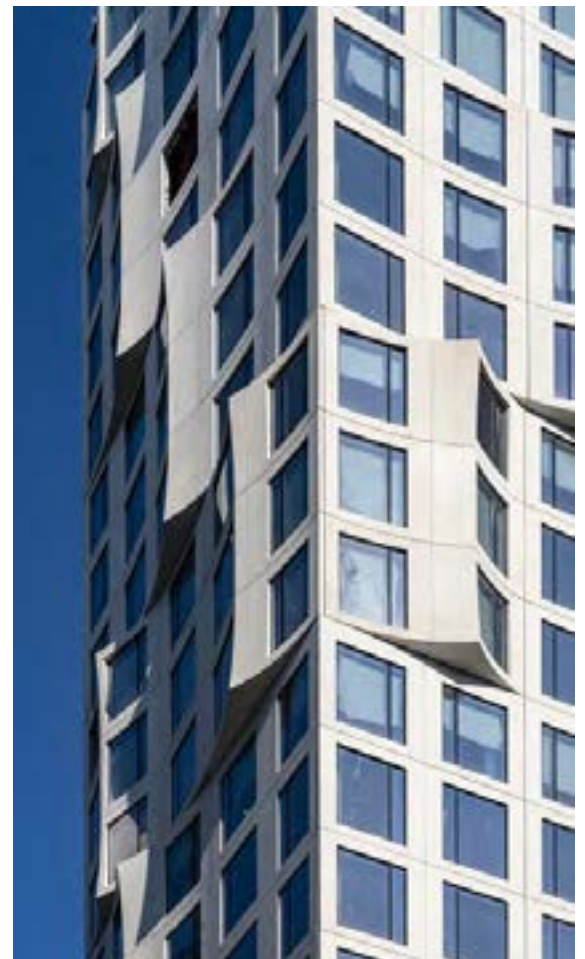
2021

**Owner**

Tishman Speyer

**Architect**

Studio Gang



LERA

# 25 PARK ROW

## Peer Review

New York, NY



LERA provided peer review services for this 50-story, 665-ft (203-m) residential tower, which will also contain 52,000 sf (4,830 sm) of retail space spanning the first four floors.

**Completion Date** Under Construction

**Owner**  
L&M Development Partners

**Architect**  
COOKFOX



LERA

# 43-22 QUEENS STREET

## Peer Review

Long Island City, NY



At the request of the owner, LERA conducted a structural peer review of the structural design of this new 55-story, 600-ft (180-m), 713,000-sf (66,200-sm) luxury residential building.

**Construction Cost** Not Available  
**Completion Date** 2014

**Owner**  
Rockrose Development Corp.

**Architect**  
SLCE Architects



# 45 BROAD STREET

## Peer Review

New York, NY



LERA provided peer review services for the 1,115-ft (340-m) supertall Broad Street Tower, whose program includes 206 residential units, as well as 62,000-sf of commercial space and a 94,000-sf school.

**Construction Cost** N/A  
**Completion Date** 2016

**Owner**  
Madison Equities / Gemdale Properties

**Architect**  
CetraRuddy



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# 118 FULTON STREET

## Peer Review

New York, NY



LERA is providing peer review services for the 63-story, 483-unit mixed-use tower, located on the corner of Dutch Street in the Financial District.

**Completion Date**

Under Construction

**Owner**

Carmel Partners

**Architect of Record**

SLCEArchitects, LLP

**Design Architect**

Gerner Kronick + Valcarcel Architects PC



# 249 EAST 62<sup>ND</sup> STREET

## Peer Review

New York, NY



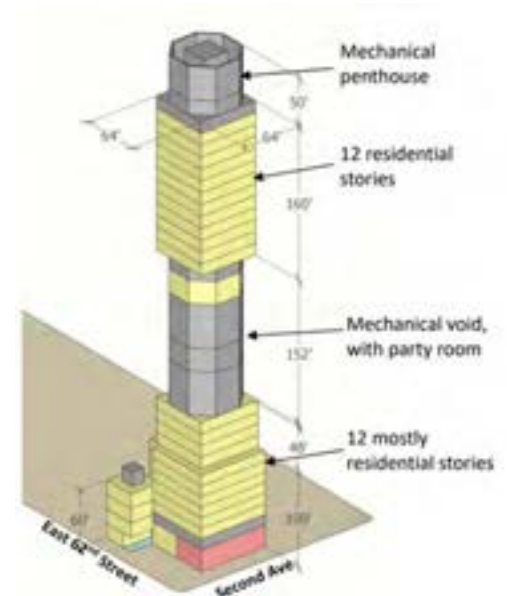
LERA provided peer review services for this 32-story, 510-ft residential tower with a Jetsons-esque mid-level podium.

**Completion Date**

Under Construction

**Architect**

Rafael Viñoly



# 39 CONDUIT ROAD

## Peer Review

Hong Kong, China



This luxury residential development has a total gross floor area of 2 million sf (187,260 sm). LERA provided peer review services and assisted with wind engineering and damper designs.

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	2009

**Owner**  
Henderson Land Development

**Architect**  
Dennis Lau & Ng Chun Man  
Architects and Engineers



LERA

# ONE CENTRAL, MANDARIN ORIENTAL

## Peer Review

Macau, China



This project consists of a peer review for a multi-tower development containing hotel, casino, and commercial uses. Buildings contain between 42 through 49 stories. Additionally, LERA performed schematic design for the podium level retail.

**Construction Cost**     \$435 million  
**Completion Date**     2010

**Owner**  
Hongkong Land

**Architect**  
Kohn Pedersen Fox



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# INTERNATIONAL FINANCE CENTER 1 & 2

## Peer Review

Hong Kong, China



The design for Two International Finance Center facing directly onto Victoria Harbour, is meant to be understated yet iconic. LERA provided value engineering, structural audit and alternative designs for a 900,000-sf (83,000-sm), 38-story office tower; an 88-story, 1,378-ft (420-m) tower; and two hotels totaling 1.2 million sf (110,000-sm).

LERA's value engineering efforts included the redesign of flooring framing that resulted in total savings of \$7.5 million.

**Construction Cost** \$520 million

**Completion Date** 1998

### **Owner**

Central Waterfront Property Management

### **Architect**

Cesar Pelli & Associates

### **Associate Architect**

Rocco Design Associates

# INTERNATIONAL COMMERCE CENTER

## Peer Review

Hong Kong, China



Centrally located in Kowloon, the 118-story, 1,600-ft (490-m), 2.8 million-sf (262,200-sm) International Commerce Center contains an array of uses, including corporate office, hotel and retail. LERA provided the concept design for this competition-winning project, as well as advice, value engineering and peer review services for the developer, Sun Hung Kai Properties.

LERA's value engineering efforts included the redesign of floor framing that resulted in millions of US dollars of total savings.

**Construction Cost**      \$2.5 billion  
**Completion Date**      2010

**Owner**  
Sun Hung Kai Properties Ltd.

**Architect**  
Kohn Pedersen Fox Associates



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# GUANGZHOU TOWER EAST

## Peer Review

Guangzhou, China



This 530-m (1,738-ft) tall, mixed-use tower has offices, apartments, and other amenities. We are providing peer review and value engineering services, and alternate designs to the developer, New World Development, Hong Kong.

LERA's value engineering efforts included the overall optimization of steel that resulted in total savings of \$20 million.

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	Concept Design 2010

**Owner**  
New World Project Management;  
Guangzhou Xinyu Properties Co. Ltd.

**Architect**  
Kohn Pedersen Fox Associates

**Engineer of Record**  
ARUP Group



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# THE CTF TIANJIN

## Peer Review

Tianjin, China



LERA provided a four-stage peer review for both the tower and podium of this 96-story, 530-m (1,740-ft) supertall tower with a four-level basement structure and an 86 m (282 ft) roof crown assembly. Totalling 389,980 sm (4.2 million sf), the mixed-use tower will contain office, serviced apartment and hotel floors, and the 32-m (105-ft) podium building is topped by an undulating green roof.

Designed to meet LEED Gold standards, the structurally unique tower utilizes curved corners, a tapering form and an open top and porous crown to dramatically reduce wind loads while maximizing structural efficiency. The high-performance façade system was designed to significantly reduce heating and cooling requirements while maximizing daylighting and views.

**Construction Cost** Not Available

**Completion Date** 2018

### Owner

Tianjin New World Huan Bo Hal Real Estate Development Co., Ltd.

### Architect

SOM and Ecadi



# SHUI ON CHONGQING INTERNATIONAL TRADE & COMMERCE CENTER

## Peer Review

Chongqing, China



This mixed-use development is being design and constructed in three phases. LERA provided peer review services for the 1,540-ft (470-m) Phase 2 Tower, containing 99 levels above grade and 4 levels below grade. The tower, which contains office and hotel space, has a gross floor area of approximately 2.85 million sf (264,700 sm).

<b>Construction Cost</b>	Not Available
<b>Completion Date</b>	Under Construction

**Owner**  
Shui On Land Limited

**Architect**  
Kohn Pedersen Fox Associates

# BUSAN LOTTE TOWER

## Peer Review

Busan, South Korea



LERA provided peer review services for this 513-m (1,683-ft), 246,000-sm (2,647,000-sf) mixed-use tower.

**Construction Cost**

Not Available

**Completion Date**

Under Construction

**Owner**

Lotte Group

**Architect**

Skidmore, Owings & Merrill



LERA

# PARC1 MIXED-USE DEVELOPMENT

## Peer Review

Seoul, Korea



LERA provided peer review services for a mixed-use development containing a 32-story hotel, 69- and 53-story office towers, and a 7-story retail podium. Skylan Projects is the Project Manager.

**Construction Cost** \$2.3 Billion  
**Completion Date** 2020

**Owner**  
Skylan Development

**Architect**  
Rogers Stirk Harbour & Partners



# EMIRATES HEADQUARTERS

## Peer Review

Dubai, United Arab Emirates



LERA provided peer review services for two 60-story towers, one hotel and one office.

**Construction Cost**      \$500 million

**Completion Date**      1996

**Owner**

Acer Wargon  
The Ruler's Office

**Architect**

NORR Group Consultants International



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# SAN JOSE ARENA

## Peer Review

San Jose, CA



This project consisted of the design review of a 425-ft by 425-ft (130-m by 130-m) multi-purpose arena.

**Construction Cost**      \$130 million

**Completion Date**      1993

**Owner**

Redevelopment Agency of the City of San Jose

**Architect**

Sink Combs Dethlefs

