Forensic Engineering
and Loss Consulting

LERA

LERA

Consulting Structural Engineers

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Mumbai 400 028
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SHANGHAI

Suite 2102, Jingan China Tower
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HONG KONG

Suite 5132, 51/F Hopewell Centre
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Regus, Cabin 619, 6th Floor,
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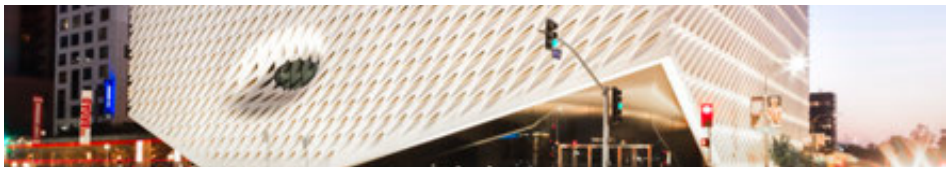
MARKET SECTORS

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

LERA

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, LERA also operates offices in Mumbai, Shanghai, Hong Kong, Seoul and Jaipur.

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

CURRICULA VITAE

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

Partner

LERA Consulting Structural Engineers
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New York, NY 10005-1339
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benjamin.cornelius@lera.com

Profile

Benjamin Cornelius is a structural engineer with 30 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 Forensic Investigations and Expert Witness Practice and is an experienced expert witness. He has conducted over fifty forensic investigations in North America, Europe, and Asia in disputes totaling over $2 billion. He has provided consultations in disputes involving tall buildings, residential structures, embassy complexes, medical facilities, historic buildings, sports and entertainment structures, transportation facilities, and modular construction. He has led investigations into the collapse of steel, concrete, and masonry structures and has testified in mediation, arbitration, and court proceedings. Mr. Cornelius is past Chair of the Executive Committee of the Forensic Engineering Division of the American Society of Civil Engineers (ASCE) and has served as an adjunct faculty member at the Rhode Island School of Design. He is author of several papers and articles on structural engineering topics and co-authored ASCE's *Guidelines for Failure Investigations* (2018) and ASCE's *Investigation of Constructed Facilities: Sampling Methodologies* (2021). He is licensed as an Engineer in several U.S. states and Canada.

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

- *Construction Documents for an Airport Terminal.* Retained to evaluate the quality and completeness of construction documents for an 800,000-square foot terminal structure and provide expert witness services in mediation and litigation.
- *Collapse of a concrete and masonry building.* Retained to lead the forensic engineering investigation of a building collapse on behalf of a governmental authority.
- *Constructability of Composite Reinforced Concrete and Structural Steel Structure.* Retained to investigate and serve as an expert witness in the investigation into alleged constructability issues involving two-story deep steel trusses supported on composite concrete and steel columns in a hotel and conference center expansion in the southeastern U.S.
- *Deterioration of Wood-Framed Structure.* Retained to investigate deterioration to lumber, timber, and oriented strand board (OSB) structural components in a four-story condominium complex in the eastern U.S., to provide repair recommendations, and to provide expert witness services in litigation.
- *Earthquake Load Resisting System Design.* Retained to investigate alleged defects in the seismic design criteria and structural design of a condominium project in the eastern U.S. and to provide expert witness services in mediation and litigation.
- *Collapse of a Reinforced Concrete Residential Tower.* Retained to investigate and serve as an expert witness in the collapse of a reinforced concrete residential structure in the U.S.
- *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. Delivered presentations before a mediator and over 80 representatives of parties, attorneys, experts, and insurers at two mediation sessions.

- *Patent Infringement and Trade Secret Misappropriation*. Retained to investigate the technical aspects of a case involving steel modular construction systems.
- *Construction Logistics and Quality*. Retained to investigate the effects of changes to cranage 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 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.
- *Water Damage to Wood Framing*. Retained to investigate and provide expert services concerning water infiltration and damage lumber and glue-laminated structural elements at a custom single family residence in Long Island, New York.
- *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 wood-framed multi-story 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

Columbia University **2022 – Present**

Guest Lecturer, Fu Foundation School of Engineering and Applied Science

Rhode Island School of Design (RISD) **2011 – 2021**

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

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

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

Pleasantville High School Graduating Senior Internship Program **Spring 2023**

Company Liaison and Team Leader, mock forensic engineering investigation into the collapse of the Hard Rock Hotel, New Orleans, LA, by four science-oriented high school interns

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

Coach, Mission Possible Team

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

Benjamin Cornelius is licensed as an Engineer in several U.S. states and Canada.

Licensed Professional Engineer, New York	1999 – Present
Licensed Professional Engineer, New Jersey	2015 – Present
Licensed Professional Engineer, Rhode Island	2016 – Present
Licensed Professional Engineer, Pennsylvania	2017 – Present
Licensed Professional Engineer, Maryland	2017 – Present
Licensed Professional Engineer, Connecticut	2017 – Present
Licensed Professional Engineer, District of Columbia	2017 – Present
Licensed Professional Engineer, Florida	2018 – Present
Licensed Professional Engineer, Georgia	2018 – Present
Licensed Professional Engineer, Texas	2018 – Present
Licensed Professional Engineer, Indiana	2019 – Present
Licensed Professional Engineer, Louisiana	2019 – Present
Licensed Professional Engineer, Nevada	2020 – Present
Licensed Professional Engineer, Utah	2022 – Present

Licensed Professional Engineer, Alabama 2022 - Present

Licensed Professional Engineer, Colorado 2023 - Present

Licensed Civil Engineer, California 2014 – Present

Licensed Civil Engineer, Washington State 2014 – Present

Licensed Professional Civil Engineer, Massachusetts 2017 – Present

Licensed Structural Engineer, Washington State 2014 – Present

Designated Model Law Structural Engineer 2014 – Present
National Council of Examiners for Engineering and Surveying (NCEES)

Licensed Professional Engineer, Alberta, Canada 2023 – Present

Education

Bachelor of Architectural Engineering, The Pennsylvania State University **1994**

Phi Alpha Epsilon Architectural Engineering Honor Society 1994 – Present

Tau Beta Pi Engineering Honor Society 1992 – Present

Professional Practice Activities Award 1994
Professional Engineers in Private Practice of Pennsylvania

Gladys M. Baird Memorial Scholarship Award 1993

Publications

Co-Author, **"FIU Pedestrian Bridge Collapse and Design Peer Review Liability"** 2022
The Forum on Construction Law, American Bar Association, 2022 Fall Program

Editor and Co-Author, **"Investigation of Constructed Facilities – Sampling Methodologies"** 2021
American Society of Civil Engineers

Co-Author, **"Chapter 6: Forensic Engineering Reports"** 2018
Guidelines for Failure Investigation: Second Edition, American Society of Civil Engineers, Forensic Engineering Division, Committee on Forensic Investigations

Author, **"Five Key Steps Project Teams Can Take to Manage Risk in Property Line Construction Projects"** 2016
The Critical Path, Defense Research Institute, Construction Law Committee Newsletter, Volume 20, Issue 4

Author, **"LERA Assists Property Owners Adjacent to Construction Projects"** 2016
LERA Summer 2016 Newsletter

Author, **"Designing Structures for the Effects of Extreme Events"** 2016
Construction Law Seminar, Defense Research Institute, New Orleans, LA

Author, **"Getting Back to Nature…in Las Vegas"** August 2008
Modern Steel Construction

Author, **"Exposed Structural Systems Enhance Sustainability"** April 2008
STRUCTURE Magazine

Presentations

Invited Speaker with David Suchar, Esq., and Eric Singer, Esq., September 2022
"FIU Pedestrian Bridge Collapse and Design Peer Review Liability"
The Forum on Construction Law, American Bar Association, 2022 Fall Program

Moderator, Session F1, **"Forensic Investigations and Remediations"** April 2022
American Society of Civil Engineers, Structural Engineering Institute, Structures Congress 2022, Atlanta, GA

Invited Speaker, "**Innovation and the Design Professional's Standard of Care**" November 2021
Division 3 of The Forum on Construction Law, American Bar Association

Invited Speaker, **"Forensic Strategies that Illuminate the Root Causes of Problems on Construction Projects"** September 2021
The New York State Bar Association

Speaker, "**Enhancing Forensic Engineering through Custom Software Development**" April 2019
American Society of Civil Engineers, Metropolitan Section, Forensic Engineering Group, Continuing Education Lecture, New York, NY

Moderator, **"Qualitative and Quantitative Sampling for Construction Defect Investigations"** November 2018
American Society of Civil Engineers, 8th Congress on Forensic Engineering, Austin, TX

Speaker, **"Techniques and Protocols for Pre-Construction Surveys"** November 2018
American Society of Civil Engineers, 8th Congress on Forensic Engineering, Austin, TX

Invited Speaker, **"Forensic Strategies that Illuminate the Root Causes of Problems on Construction Projects"** November 2018
American Society of Civil Engineers, Structural Engineering Institute, Geo-Structures Confluence 2018, St. Charles, MO

Invited Speaker, **"Construction Dispute Resolution Through Forensic Engineering"** April 2018
American Society of Civil Engineers, Structural Engineering Institute, Structures Congress 2018, Fort Worth, TX

Invited Co-Speaker with Kriton A. Pantelidis, Esq., **"Managing Design Professionals' Risk in the Design and Construction of Property Line Building Structures"** April 2018
American Society of Civil Engineers, Structural Engineering Institute, Structures Congress 2018, Fort Worth, TX

Invited Co-Speaker with Kriton A. Pantelidis, Esq., **"Managing Risk in the Design and Construction of Property Line Building Structures"** October 2017
American Council of Engineering Companies, 2017 Fall Conference, Orlando, FL

Invited Speaker, **"Four Strategies Forensic Engineers Use to Unravel Construction Disputes"** August 2017
Council of American Structural Engineers Risk Management Seminar, Chicago, IL

Co-Speaker with Kriton A. Pantelidis, Esq., **"Risks of Property Line Construction for Design Professionals"** 2017
Defense Research Institute Construction Law Committee Webinar

Invited Speaker, **"Four Key Strategies for Unraveling Construction Disputes"** 2016
Structural Engineers Coalition of Connecticut, New Haven, CT

Invited Panelist, **"Engineering and Construction Issues in Catastrophic Loss"** 2016
Defense Research Institute Construction Law Seminar, New Orleans, LA

Invited Speaker, **"Enhancing the Viability of Urban Housing Projects through Structural Buildover and Reuse"** 2016
Residential Building Design and Construction Conference, University Park, PA

Co-Speaker with Doug Gonzalez, P.E., **"Adaptive Reuse: Structural Concepts and Approaches"** 2014 – Present
Various Architectural Firms

Panel Discussion Moderator, **"The Fog of Failures: Understanding and Explaining Complex Engineering Issues"** 2013
Construction Law SuperConference, San Francisco, CA

Invited Speaker, **"The Art of Structural Design"** 2010
Rotary Club, Pleasantville, NY
Rotary Club, Briarcliff, NY

Invited Speaker, **"The World Trade Center"** May 2002
Architectural Engineering Department, The Pennsylvania State University, University Park, PA

Speaker, **"Comparison of Masonry Provisions: NYC Building Code versus IBC 2000"** 2002
Structural Engineers Association of New York, New York, NY

Project Honors and Awards

MassArt Design and Media Center, Boston, MA
American Architecture Award 2017
The Chicago Athenaeum Museum of Architecture and Design/The European Centre for Architecture Art Design and Urban Studies

Design Award – Education Facilities Design 2016
Boston Society of Architects (BSA)

The Broad, Los Angeles, CA
Project of the Year, Southern California 2016
Engineering News-Record (ENR) Regional Best Projects

Best Project, Southern California – Cultural/Worship 2016
Engineering News-Record (ENR) Regional Best Projects

Grand Prize 2016
46th Annual Los Angeles Business Council (LABC) Architectural Awards

Finalist – Architecture + Engineering 2016
Architizer A+ Awards

Design Award of Honor 2016
American Institute of Architects New York (AIA NY)

Architecture Award 2015
The Chicago Athenaeum Museum of Architecture and Design

Design Award of Honor 2014
American Institute of Architects Los Angeles (AIA LA)

Las Vegas Springs Preserve Visitor Center, Las Vegas, NV
Platinum Award for Engineering Excellence 2008
American Council of Engineering Companies New York (ACEC NY)

Award of Merit 2008
American Institute of Steel Construction, IDEAS Award

AIA Nevada Citation Award 2007

City of Las Vegas Mayor's Urban Design Award 2007

AIA Nevada Honor Award, Unbuilt Project 2003

Professional Honors and Awards

Certificate of Appreciation, Distinguished Service to the Society 2022
American Society of Civil Engineers

Certificate of Recognition, Public Service in Response to September 11, 2001 Terrorist Attack 2002
American Society of Civil Engineers, New Jersey Section

Certificate of Appreciation, World Trade Center Rescue and Recovery Effort 2001
City of New York

Professional Affiliations

Past Member and Past Chair, Executive Committee 2020 – Present
ASCE Forensic Engineering Division

Vice-Chair 2019 – Present
ASCE Metropolitan Section, Forensic Engineering Group

Member 2015 – Present
ASCE Forensic Engineering Division

Past Chair, Committee on Forensic Investigations 2016 – 2018
ASCE Forensic Engineering Division

Member 2016 – Present
Structural Engineers Association of New York (SEAoNY)

Member 2014 – Present
ASCE Metropolitan Section, Forensic Engineering Group

Affiliate Member, Forum on Construction Law, Design Division 2012 – Present
American Bar Association

Member 1998 – Present
American Society of Civil Engineers (ASCE)

Chair, Professional Practice, Forensic Investigations Track November 2015
ASCE Forensic Engineering 7th Congress, Miami, Florida

Member 2014 – 2015
ASCE 2015 Forensic Congress Steering Committee

Volunteer 2013 – 2014
Schoharie Area Long-Term (SALT) Relief Organization

Past Chair, Masonry Committee 2002
Structural Engineers Association of New York (SEAoNY)

Updated 2 February 2024

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

Partner

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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, 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.

Project Experience, Design

- *Lasker Rink and Pool, Central Park, New York, NY.* Partner-in-Charge for
- *Lucas Museum of Narrative Art, Los Angeles, CA.* Partner-in-Charge for
- *Philadelphia Contemporary, Philadelphia, PA.* Partner-in-Charge for
- *Princeton University, Environmental Studies (ES) + School of Engineering and Applied Science (SEAS), Princeton, NJ.* Partner-in-Charge for
- *University of Chicago, Rubenstein Forum, Chicago, IL.* Partner-in-Charge for
- *Johns Hopkins University, Hopkins D.C., Washington, D.C.* Partner-in-Charge for
- *Residential Development, Washington, D.C.* Partner-in-Charge for
- *Newseum Residences., Washington, D.C.* Partner-in-Charge for
- *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, Shenzen, 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.
- *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.
- *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.
- *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.
- *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.

Teaching Experience

Cornell University **Spring 2016**

Guest Lecturer, College of Architecture, Art and Planning

Columbia University **2001 – 2010**

Adjunct Assistant Professor, School of Architecture

Professional Licenses and Designations

Licensed Professional Engineer – New York & 31 additional states. Eligible in all 50 states. 1986 – Present

Licensed Professional Engineer – Ontario, Canada 2023 – 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**
Chi Epsilon National Civil Engineering Honor Society 1981

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 2017
The Chicago Athenaeum: Museum of Architecture and Design and The European Centre for Architecture Art Design and Urban Studies

Design Award of Merit 2017
Society of American Registered Architects New York (SARA NY)

Design Award – Education Facilities Design 2016
Boston Society of Architects (BSA)

The Broad, Los Angeles, CA

Outstanding Project (Veil) 2017
National Council of Structural Engineers Association (NCSEA) Excellence in Structural Engineering Awards

Project of the Year, Southern California 2016
Engineering News-Record (ENR) Regional Best Projects

Best Project, Southern California – Cultural/Worship 2016
Engineering News-Record (ENR) Regional Best Projects

Grand Prize 2016
Los Angeles Business Council (LABC) 46th Annual Los Angeles Architectural Awards

Design Award of Honor 2016
American Institute of Architects New York (AIA NY)

Finalist – Architecture + Engineering 2016
Architizer A+ Awards

Architecture Award 2015
The Chicago Athenaeum Museum of Architecture and Design

Design Award of Honor 2014
American Institute of Architects Los Angeles (AIA LA)

Novartis, East Hanover, NJ

Project of the Year 2015
Engineering News-Record (ENR)

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

Diamond Award – Structural Systems 2018
American Council of Engineering Companies New York (ACEC NY)

Best in Competition & Architecture Honor Award 2017
American Institute of Architects New York (AIA NY)

Second Place: Mid-Rise Buildings 2017
American Concrete Institute (ACI) Excellence in Concrete Construction Awards

Visionary Architecture Award 2017
Society of American Registered Architects New York (SARA NY)

MASterworks Award – Best New Building 2017
The Municipal Art Society of New York (MASNYC)

Award of Merit – Higher Education/Research 2017
Engineering News-Record (ENR) New York Best Projects

Award of Merit – Buildings Category 2017
Post-Tensioning Institute (PTI) Awards

Finalist, Excellence in Institutional Development 2017
Urban Land Institute (ULI) New York

Best of Design Award – Façade 2017
Architect's Newspaper (AN) Best of Design Awards

Finalist, Architecture + Engineering & Unbuilt Institutional 2016
Architizer A+ Awards

Excellence in Structural Engineering Award 2015
Structural Engineers Association of New York (SEAoNY)

Excellence in Structural Engineering Award 2015
National Council of Structural Engineers Association (NCSEA)

Annual Award – 53rd Annual Roger H. Corbetta Awards 2014
Concrete Industry Board (CIB)

Award for Innovative Design 2014
American Concrete Institute, Strategic Development Council

PS 216 Edible Schoolyard, Brooklyn, NY
MASterworks Award – Best Green Design Initiative 2014
The Municipal Art Society of New York (MASNYC)

Natural History Museum of Utah, Salt Lake City, UT
Excellence in Architecture for a New Building 2014
Society for College and University Planning/American Institute Architects (AIA) Committee on Architecture for Education

Calder Foundation, New York, NY
A+ Cultural Award 2015
Architizer A+ Awards

Westchester Community College, Gateway Building, Valhalla, NY
Excellence in Structural Engineering Award 2011
Structural Engineers Association of New York (SEAoNY)

American Architecture Award 2011
The European Centre for Architecture Art Design and Urban Studies and The Chicago Athenaeum

Architecture Design Award of Merit 2011
American Institute of Architects New York (AIA NY)

National Award 2011
American Institute of Steel Construction (AISC) Innovative Design in Engineering and Architecture with Structural Steel (IDEAS^2) Awards

National Design Award 2011
Society of American Registered Architects (SARA)

High Honor Award 2011
American Institute of Architects (AIA) Westchester/Hudson Valley

Merit Award 2011
American Institute of Architects New York (AIA NY)

Metalmag Architectural Award, Wall Panel & Metal Building Categories 2011
Umicore Building Projects

Best of 2010 Awards (Higher Education/Research) 2011
New York Construction

Public Farm One, Queens, NY

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

Best of 2008 Awards (Park/Landscape) 2008
New York Construction

Merit Award 2008
Structural Engineers Association of New York (SEAoNY)

Newseum and Freedom Forum, Washington, DC

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

Design Award of Merit 2009
American Institute of Architects New York (AIA NY)

National Design Award 2009
Society of American Registered Architects

Award of Merit 2009
Society of American Registered Architects/New York Council

Craftsmanship Award Winner 2008
Washington Building Congress

Best of 2008 Award, Cultural Project of the Year 2008
Mid-Atlantic Construction News

Merit Award 2008
Structural Engineers Association of New York (SEAoNY)

Las Vegas Springs Preserve Visitor Center, Las Vegas, NV

Platinum Award for Engineering Excellence 2008
American Council of Engineering Companies New York (ACEC NY)

Award of Merit 2008
American Institute of Steel Construction (AISC) Innovative Design in Engineering and Architecture with Structural Steel (IDEAS^2) Awards

Citation Award 2007
American Institute of Architects (AIA) Nevada

Urban Design Award 2007
Mayor of the City of Las Vegas

Design Award of Honor 2003
American Institute of Architects (AIA) Nevada

McCarran International Airport Satellite D Expansion & Control Tower, Las Vegas, NV

Gold Award for Engineering Excellence 2007
American Council of Engineering Companies New York (ACEC NY)

Excellence in Design Award 2005
American Council of Engineering Companies New York (ACEC NY)

William J. Clinton Presidential Library and Museum, Little Rock, AR

Architecture Design Award of Honor 2006
American Institute of Architects (AIA) National

Engineering Awards of Excellence 2006
American Institute of Steel Construction (AISC)

Award for Engineering Excellence 2006
American Council of Engineering Companies New York (ACEC NY)

Honorable Mention 2007
American Institute of Architects (AIA)/COTE Top Ten Green Projects

Library Building Award 2007
American Institute of Architects (AIA)/ALA

Honor Award 2005
American Institute of Architects New York (AIA NY)

Prada Soho, New York, NY

Award of Merit 2002
New York Construction News

Miho Museum Bridge, Shiga-raki, Japan

Outstanding Structure Award 2002
International Association for Bridge and Structural Engineering (IABSE)

Most Innovative Structure Award 1999
Structural Engineers Association of Illinois (SEAOI)

Diamond Award for Excellence in Bridge Engineering 1999
New York Association of Consulting Engineers (NYACE)

Engineering Excellence Honor Award 1999
American Consulting Engineers Council (ACEC)

HIROBA Architectural Award 1998
Kinki Federation of Architect & Building Engineers

Award of Excellence 1998
15th International Association of Lighting Designers (IALD) Design Competition

Rock and Roll Hall of Fame Museum, Cleveland, OH

National Engineering Award of Excellence 1997
American Institute of Steel Construction (AISC)

Innovative Design and Excellence in Architecture with Steel 1997
American Institute of Steel Construction (AISC)

Merit Award 1997
The Concrete Industry Board (CIB)

Puerta de Europa, Madrid, Spain

First Prize Award for Engineering Excellence 1996
New York Association of Consulting Engineers (NYACE)

Meyerson Symphony Center, Dallas, TX

Award of Merit for Out-of-Area Project — 1997
New York Concrete Industry Board

Honor Award — 1991
American Institute of Architects (AIA)

Dallas Urban Design Award — 1990
City of Dallas

Commendation for Excellence in Construction — 1990
Associated Builders & Contractors, North Texas Chapter

Professional Honors and Awards

Member, College of Engineering Thought Leaders Council — 2015 – Present
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)

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

Partner

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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.

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 50th 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, Alberta, Canada	2023 – 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"** March 2017
International Journal of High-Rise Buildings, CTBUH

Author, **"Bitexco Financial Tower"** June 2009
STRUCTURE 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

Presentations

Invited Presenter, **"Structural Design for Tall and Iconic Buildings in the Aftermath of 9/11"** 2004
Princeton University, Princeton, NJ

Invited Presenter, **"Successful Exposed to View Structures"** 1999
Structural Engineering Association of Texas, Austin, TX

Invited Presenter, **"The Art of Structural Engineering"** 1995
Texas Society of Architects Annual Convention, Dallas, TX

Invited Presenter, **"The World Trade Center Bombing & Reconstruction"** 1994
Boston Society of Civil Engineers Annual Meeting, Boston, MA

Professional Honors and Awards

The World Trade Center Medal for Exceptional Service 1993
City of New York

Cited as "Those Who Made Marks in the Construction Industry" 1989
Engineering News Record

Professional Affiliations

Fellow 1997 – Present
American Society of Civil Engineers (ASCE)

Member 2006 – 2008
New York City Building Codes Structural Loads Committee

Member 2001 – 2003
American Institute of Steel Construction (AISC) Blast and Impact Resistant Design Committee

Past-Chairman, Committee CL-5, Gravity Loads and Temperature Effects 1995 – 1999
Council on Tall Buildings and Urban Habitat (CTBUH)

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, 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*

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*
United Airlines, Newark Int'l Airport – C1 United 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*

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*

FAÇADE INSPECTION/REPAIR

World Trade Center Complex, *New York, NY*
230 West 41st Street (Former NY Tribune Building), *New York, NY*
Parkchester Apartments, *Bronx, NY*
Columbia University Department of Real Estate Façade Repairs, *New York, NY*
NYC DDC/DHS, Harlem House Men's Shelter, *New York, NY*
NYC DDC/DHS, Charles H. Gay Center (Keener Building), *New York, NY*
DCAS, 346 Broadway (NY Life Insurance Building), *New York, NY*
DCAS, 106 Centre St (Manhattan Criminal Court), *New York, NY*

PAPERS & TALKS

Moderator, "9/11 Panel Discussion," ACEC NY Fall Conference, *2021*

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*

DCAS, 137 Centre St (Excelsior Building), *New York, NY*
25 West 20th St (Former Bayview Women's Correctional Facility), *New York, NY*
NYC SCA, Various Schools, *New York & Bronx, NY*
11 East 51st Street, *New York, NY*
575 West End Avenue, *New York, NY*
853 Seventh Avenue (The Wyoming Building), *New York, NY*

RESILIENCY/INFRASTRUCTURE

NYC DEP, Kensico-Eastview Connection – Independent Review, *Mount Pleasant, 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*
NYC DDC, Morrisania Sexual Health Clinic COVID-19 Emergency Services, *Bronx, NY*
United Nations, Capital Master Plan & Infrastructure Upgrades, *New York, NY*
CSXT, Howard St. Tunnel Camden Storm Drain Replacement, *Baltimore, MD*
Valley Hospital, Cooling Tower Replacement, *Paramus, NJ*
FreshDirect Distribution Center Catwalks, *Bronx, NY*
Columbia University, Mudd Hall Rooftop Handrail, *New York, NY*

RENOVATIONS/HISTORIC PRESERVATION

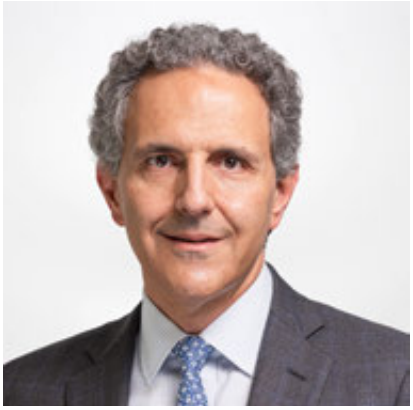
NYS OASAS, Anchor House Renovation & Addition, *Brooklyn, NY*
CUNY Lehman College, Gillet Hall Renovation, *Bronx, NY*
The Women's Building Condition Assessment, *New York, NY*
Apollo Theater Restoration & Expansion, *New York, NY*
DCAS, Historic Preservation Services On-Call, *New York, NY*
NYC DDC, 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*

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*
Sun River Health, Wyandanch Health and Wellness Center & YMCA, *Babylon, 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*
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

Cornell University, Ives Hall Renovation, *Ithaca, NY*
New York University, Wagner School, *New York, NY*
Columbia University, East Campus Master Plan, *New York, 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*
SUNY Albany, Rehabilitation of Husted Hall, *Albany, NY*
SUNY Albany, School of Business, *Albany, NY*



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*

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*

RESIDENTIAL/HOTEL

250 East 49th Street, *New York, NY*
505 West 47th Street, *New York, NY*
315 East 46th Street, *New York, NY*
495 West Street, *New York, NY*
Surrey Hotel Renovation, *New York, NY*
Tregunter Path, *Hong Kong*
Landes Residence, *Miami, FL*

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

Memorial Sloan Kettering Cancer Center, Confidential Clinical Facility, *New York, NY*
Mount Sinai South Nassau, Medical Arts Pavilion, *Long Beach, NY*
Mount Sinai South Nassau, J-Wing 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*
NYC H+H, Pharmacy Lab Suites, *New York, NY*
NYC H+H/NYPA, Bellevue Hospital Mechanical Platform, *New York, NY*
OBHS, Interfaith Medical Center Emergency Department Expansion, *Brooklyn, NY*
OBHS, Aaron Pavilion Inpatient Services Relocation, *Brooklyn, NY*
OBHS, Interfaith Medical Center EES Risers and Closets, *Brooklyn, NY*
SBUH, Pediatric Emergency Department Expansion, *Stony Brook, NY*
SBUH, OR Expansion, *Stony Brook, NY*
SBUH, Imaging Area Optimization, *Stony Brook, NY*

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

SBUH, Hybrid Cath Lab & Equipment Replacement, *Stony Brook, NY*
SBUH, Ambulatory Care Pavilion Mammography Suite Relocation, *Stony Brook, NY*
SBUH, Ambulatory Care Pavilion Backfill, *Stony Brook, 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*

RENOVATIONS/REPAIRS

NYS OGS, Jamaica Armory Renovation, *Queens, NY*
NYS OGS, Shirley A. Chisholm Building 13th Floor Fit-Out, *Brooklyn, NY*
NYS OGS, Whitestone Armory Arms Vault, *Whitestone, NY*
NYS OGS, Marcy Armory Condition Assessment, *Brooklyn, NY*
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*
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*

ENERGY/INFRASTRUCTURE

PANYNJ, JFK Int'l Airport – Central Substation #2, *Queens, NY*
Northport VA Medical Center, Electrical Upgrade, *Northport, NY*
NYC EDC, Brooklyn Army Terminal Phase V Renovation, *Brooklyn, NY*
NYC SCA, PS 705 at K022 Infrastructure Upgrades, *Brooklyn, NY*
NYC SCA, K405 Infrastructure Upgrades, *Brooklyn, NY*
NYC DEP, Wards Island WWTP SHARON Replacement, *New York, NY*
NYC DEP, BWT North River WWTP Condition Assessment, *New York, NY*
NYCHA, Patterson Houses Bldg 13 Water Tank Repair, *Bronx, NY*
SUNY Binghamton, Steam Generators, *Binghamton, NY*
CUNY Brooklyn College, East Quad Utilities and Paving, *Brooklyn, NY*
Mount Sinai South Nassau, Central Utility Plant, *Oceanside, NY*

GOVERNMENT

NYC DDC/DPR, Rockaway Operational Headquarters, *Queens, NY*
DASNY, Staten Island Courthouse, *Staten Island, NY*
United Nations, Consolidated Building, *New York, NY*

MUSEUMS/CONVENTION CENTERS

Newseum and Freedom Forum, *Washington, DC*
Albany Convention Center and Hotel, *Albany, NY*

EDUCATION

Brown University, Friedman Study Commons, *Providence, RI*
Cornell University, CALS Greenhouses Renovation, *Ithaca, NY*
Princeton University, Dillon Gym Renovation, *Princeton, NJ*
CUNY Brooklyn College, Ingersoll Hall Pump Replacement, *Brooklyn, NY*
CUNY Graduate Center, Center for Data Visualization, *New York, NY*
CUNY Hunter College, Cooperman Library Renovation, *New York, NY*
CUNY Kingsborough CC, Performing Arts Center Renovation, *Brooklyn, NY*
CUNY Lehman College, Bookstore Relocation, *Bronx, NY*
CUNY Macaulay Honors College, New Media Jobs Incubator & Lab, *New York, NY*
CUNY Macaulay Honors College, RTU Screen, *New York, NY*
CUNY Medgar Evers College, Carroll Street Building Renovation, *Brooklyn, NY*
CUNY Queens College, Outdoor Athletic Facility, *Queens, NY*
CUNY Queens College, HUB Renovation, *Queens, NY*
CUNY Queensborough CC, Kurt Schmeller Library ADA Upgrades, *Queens, NY*
CUNY Staten Island College, Center for Big Data Renovation, *Staten Island, NY*
CUNY Staten Island College, Building 2M Phase 4 Renovation, *Staten Island, NY*
CUNY Staten Island College, 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 Chemistry Building Renovation, *Stony Brook, NY*

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 & FL

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, FEMA & 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
- and Multiple Hurricanes

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

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

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)*

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*

RESIDENTIAL/HOTEL

Confidential High-Rise Mixed-Use Hotel & Residential Development, *Miami Beach, FL*
Confidential High-Rise Residential Development, *Miami, FL*
1900 Crystal Drive, *Arlington, VA*
Schuylkill Yards Development, *Philadelphia, PA*
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*
Columbia University, 600 West 125th Street Residential Tower, *New York, NY*
West Street Residential Project, *New York, NY*
Debrosses Street Loft, *New York, NY*
Tradewinds Residential Tower, *Kuala Lumpur, Malaysia*
KLCC Residential Tower Land N, *Kuala Lumpur, Malaysia*
Grange Court, *Singapore*

OFFICE/MIXED-USE

Confidential High-Rise Mixed-Use Development & Mid-Rise Parking, *Miami, FL*
4 World Trade Center, *New York, NY*
Pacific Park Brooklyn, *Brooklyn, NY*
Schuylkill Yards Development, *Philadelphia, PA*
3151 Market Street, *Philadelphia, PA*
Media Company Office, 4 World Trade Center, *New York, NY*

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*

Hudson River Trading Office, 4 World Trade Center, *New York, NY*
Hudson River Trading Office, 3 World Trade Center, *New York, NY*
Supertall Tower, *Malaysia*
United Nations Consolidated Building, *New York, NY*
Shanghai World Financial Center, *Shanghai, China*
Sentra BDNI, *Jakarta, Indonesia*

RENOVATIONS/RETAIL

Amyris Biossance Retail Store, *Miami, FL*
JVN Retail Store, *Miami, FL*
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*

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*
Columbia University, 600 West 125th Street Residential Tower, *New York, NY*
Drexel University, Schuylkill Yards Development, *Philadelphia, PA*
University of Pennsylvania, Morgan Building Renovation & Addition, *Philadelphia, PA*
Temple University, Klein College of Media and Communication & The Center for Performing and Cinematic Arts, *Philadelphia, PA*
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*
Success Academy Bronx Campus, *Bronx, NY*

HEALTHCARE/RESEARCH

3151 Market Street, *Philadelphia, PA*
3025 JFK Blvd, *Philadelphia, PA*
650 Park Ave, *King of Prussia, PA*
Schuylkill Yards Development, *Philadelphia, PA*

CULTURAL/PERFORMING ARTS

Rock and Roll Hall of Fame & Museum Renovation and Expansion, *Cleveland, OH*
Rock and Roll Hall of Fame & Museum, *Cleveland, OH*
NYC DDC, New York Hall of Science Addition, *Queens, NY*
William J. Clinton Presidential Library & Museum, *Little Rock, AR*
Princeton University, Lewis Center for the Arts – Peer Review & Value Engineering, *Princeton, NJ*
Gagosian Gallery Renovation, *New York, NY*

CONVENTION CENTERS/ARENAS/THEATERS

Baltimore Convention Center Expansion, *Baltimore, MD*

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 (SEAoNY)

Member, American Society of Civil Engineers (ASCE)

Tau Beta Pi, National Engineering Honor Society

OFFICE/MIXED-USE

Hydundai 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**

SAMI S. MATAR, P.E.

Associate Partner

As Project Manager, Mr. Matar provides detailed guidance on the analysis and the 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
1995 to Present

REGISTRATION

Professional Engineer – NY

EDUCATION

Cornell University
M. Engineering, Civil Engineering, *1995*

Princeton University
B.S.E., Civil Engineering, *1994*

HONORS & ACTIVITIES

B.S.E. Cum Laude, Princeton University

Member, Structural Engineers Association of New York

Member, ASCE Tall Buildings Committee

Member, ASCE Performance Based Design for Tall Buildings for Wind Task Committee

LANGUAGES

English, Spanish, French, Arabic

INVESTIGATIONS

2 Mid-Rise Residential Buildings, *New York, NY*
Transportation Project, *Middle East*
Residential Building, Astoria, *Queens, NY*
Football Stadium, *Southwestern United States*
High-Rise Residential Tower, *New York, NY*
Hospital Facility, *Northeastern United States*
Concrete Pool, *Northeastern United States*
Airport Investigation, *Middle East*

PEER REVIEWS/STRUCTURAL AUDITS

Gotham 1 & 3, *Queens, NY*
262 Fifth Avenue, *New York, NY*
85 Jay Street, *Brooklyn, NY*
Courvoisier Courts, *Miami, FL*
2 Tequesta Point, *Miami, FL*
Sky Suites, *Mumbai, India*

REPORTS/STUDIES

Brooklyn Piers, *Brooklyn, NY*
WTC Structural Integrity Inspections, *New York, NY*
West Haven Urban Renewal – Bronx Terminal, *Bronx, NY*

OFFICE/MIXED-USE

KLCC Lot 91, *Kuala Lumpur, Malaysia*
Al-Assima, *Kuwait City, Kuwait*
Espirito Santo Plaza, *Miami, FL*
BDNI Center, *Jakarta, Indonesia*
BASF Corporation Headquarters Phase II, *Mount Olive, NJ*
Alpha Supremus, *Mumbai, India*
Korean Mission, *New York, NY*

HOTEL/RESIDENTIAL

520 West 41st Street, *New York, NY*
Trinity Tower, *Seattle, WA*
Lodha World One Towers, *Mumbai, India*
Agaoglu Maslak 1453, *Istanbul, Turkey*
Hermitage Plaza, *Paris, France*
491-495 West Street, *New York, NY*

TRANSPORTATION/INFRASTRUCTURE

PANYNJ, HT Toll Booth Building Column Removal, *Jersey City, NJ*
PANYNJ, Structural Engineering On-Call, *New York, NY*
PANYNJ, LaGuardia Int'l Airport – Terminal B Pier A & B Demo, *Queens, NY*
PANYNJ, LaGuardia Int'l Airport – Delta Terminal C East, Terminal C West & Terminal D Demo, *Queens, NY*
PANYNJ, LaGuardia Int'l Airport – West Parking Garage Temporary Connector, *Queens, NY*
PANYNJ, LaGuardia Int'l Airport – Temporary Connector Bridge, *Queens, NY*
Capitol Crossing Platform, *Washington, D.C.*

GOVERNMENT/JUSTICE

U.S. New Embassy Compound (NEC), *Ankara, Turkey*
Regional Justice Center, *Las Vegas, NV*

LERA

PAPERS AND TALKS

Co-Author, "Design and Performance of Tall Buildings for Wind," ASCE Manuals and Reports on Engineering Practice No. 143, *December 2020*

Co-Presenter, "A Manual of Practice for Design and Performance of Tall Buildings for Wind," ASCE SEI Structures Congress, *April 2019*

Presenter, "State-of-the-Art Innovations and Implementations in Tall Building Design and Construction," ASCE SEI Structures Congress, *April 2018*

Co-Author, "A Structural Engineer's Approach to Differential Vertical Shortening in Tall Buildings," International Journal of High-Rise Buildings, CTBUH, *March 2017*

Presenter, "The Museum of Islamic Art, Doha, Qatar," ASCE NY Chapter, *February 2007*

BLAST RESISTANT DESIGN / SECURITY ENHANCEMENT

Risk Assessment Project for the MTA, *New York, NY*
1 World Trade Center, Freedom Tower – Peer Review, *New York, NY*
United Nations, Consolidated Building, *New York, NY*
1 Manhattan West NE Tower – Peer Review, *New York, NY*
Federal Facility Security Enhancement, Building 1
Federal Facility Security Enhancement, Building 2
Federal Facility Security Enhancement, Building 3
Federal Facility Security Enhancement, Building 4
Embassy Building Investigation

RETAIL

FordHub NYC, Westfield World Trade Center, *New York, NY*
Neiman Marcus, *San Francisco, CA*
Hong Kong Central Station Retail Bridges, *Hong Kong*
Morrell & Co. Wine Store and Wine Bar, *New York, NY*

RENOVATIONS/REPAIRS

NYS OGS, Whitestone Armory Arms Vault, *Whitestone, NY*
NYS ESD/CCOC, Javits Convention Center Renovation & Expansion, *New York, NY*
New-York Historical Society Renovation, *New York, NY*
World Trade Center Miscellaneous Repairs, *New York, NY*

EDUCATIONAL FACILITIES

CUNY Hunter College Campus School, Glass Box Addition, *New York, NY*
SUNY Farmingdale, Biotechnology Incubator Facility, *Farmingdale, NY*
Princeton University, Environmental Studies (ES) + School of Engineering and Applied Science (SEAS), *Princeton, NJ*
Princeton University, Friend Center for Engineering Education, *Princeton, NJ*
Learning Spring Elementary School, *New York, NY*

HEALTHCARE/RESEARCH

DASNY/NYC H+H, Bellevue Hospital Center, *New York, NY*
Memorial Sloan Kettering Cancer Center, Confidential Clinical Facility, *New York, NY*

PARKS/RECREATION

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

MUSEUMS/CULTURAL FACILITIES

London Cross Pavilion, *Bedford, NY*
Newseum & Freedom Forum, *Washington, DC*
Museum of Islamic Art, *Doha, Qatar*
Natural History Museum of Utah, *Salt Lake City, UT*
William J. Clinton Presidential Center, *Little Rock, AR*
Berlin Historical Museum Addition, *Berlin, Germany*

STEPHEN J. PFUND, P.E.

Senior 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

NYREJ "Ones to Watch" Profile, *May 2022*

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

JAMES SIMPSON, P.E. (CA)
Associate

As Project Manager, Mr. Simpson 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
2018 to Present

REGISTRATION
Professional Engineer – CA

EDUCATION
University of California, Berkeley
M.S. Structural Engineering, Mechanics & Materials, *2018*

Northeastern University
B.S. Civil Engineering, *2017*

HONORS & ACTIVITIES
Canstruction New York
Team Member, 2019
Team Member, 2018

INVESTIGATION PROJECTS
Airport Investigation
Concrete Pool Investigation, *North America*
Healthcare Facility Investigation, *North America*
Retaining Wall Investigation, *North America*
Concrete Balcony Investigation, *North America*
Building Settlement Investigation, *North America*
Historic Building Settlement Investigation, *North America**
Bridge Investigation, *Massachusetts**

CONDITION ASSESSMENTS
Concrete Structure Condition Assessment*

HOTEL/RESIDENTIAL
Trinity Tower, *Seattle, WA*

HEALTHCARE/RESEARCH
Stony Brook University Hospital, OR Expansion, *Stony Brook, NY*
Norwalk Hospital Addition, *Norwalk, CT**
UConn Health Center Tower, *Farmington, CT**

RENOVATIONS/INFRASTRUCTURE
15 Broad Street, *New York, NY*
Confidential Concrete Beam Retrofit, *North America**

EDUCATIONAL FACILITIES
CUNY Hunter College Campus School, Glass Box Addition, *New York, NY*
CUNY Brooklyn College, Ingersoll Hall and Roosevelt Hall Feasibility Study, *Brooklyn, NY*

MUSEUMS/CULTURAL FACILITIES
NYS OPRHP, National Purple Heart Hall of Honor Renovation & Expansion,
New Windsor, NY

** Prior Experience*

LERA

FORENSIC ENGINEERING AND LOSS CONSULTING

LERA Consulting Structural Engineers

REPRESENTATIVE FORENSIC INVESTIGATIONS

NYC DOB | Confidential Investigation, New York, NY
LERA is serving as the lead forensic engineer on behalf of NYC DOB for a confidential investigation. Working with subconsultants, LERA prepared a comprehensive sampling and testing plan, documented conditions, generated as-built drawings of the existing structure, and is performing a root cause analysis and forensic evaluation.

Hotel Parking Garage Emergency Repairs and Comprehensive Rehabilitation, Stamford, CT
This project is broken into three phases: 1) emergency repair of two double tees whose flanges were damaged and fractured by vehicle traffic; 2) a comprehensive assessment and repair design for this 40-year old garage to restore it to full functionality; and 3) a comprehensive assessment and repair design for the hotel facade. LERA mobilized a team of experts, designed emergency repairs which were successfully completed, and is now developing a comprehensive set of repair recommendations.

Condition Assessment of Existing Buildings, Northeastern United States
This comprehensive condition assessment of four adjacent 2- to 5-story buildings includes visual inspection, probing and testing, design of emergency shoring, and design of repairs to concrete, masonry, and wood structure, as well as various types of facade materials. LERA was able to assess the structure and provide recommendations that will permit Owner to restore and lease the buildings while developing plans for a high-rise development on the combined site.

540 Fulton Street Investigation, Brooklyn, NY
LERA provided forensic services to identify the cause of column settlements in this 45-story residential tower under construction. LERA developed a testing regime to confirm the contract conformance of concrete and assisted in the development of economical and constructible repair details to permit the elimination of defects and resumption of construction. The building has now been successfully completed.

McCarren Pool Complex Investigation, Brooklyn, NY
LERA investigated the cause of extensive concrete cracking observed during the construction of the rehabilitation of the McCarren Pool Complex. LERA's forensic evaluation included field observation of the cracking, review of drawings, shop drawings, concrete mix designs, concrete placement procedures, inspection reports, and analysis of concrete shrinkage and consideration of thermal effects to determine the cause of the cracking.

Maimonides Medical Center Investigation, Brooklyn, NY
LERA provided design services to the General Contractor of this new multi-specialty medical center after four columns with ungrouted base-plates dropped approximately 1" during construction. LERA designed alternate, more constructable repair details for the damage that resulted directly from the incident, as well as repairs for other deficient work uncovered as a result of the incident.


Chek Lap Kok Airport, Hong Kong


Condominium Tower


Aura Tower

LERA

Engineering Laboratory Investigation, Midwestern United States
LERA investigated the cause of the collapse of a steel framed building during construction. The forensic evaluation included field observation and documentation of the collapsed structure, review of drawings, shop drawings, reports, inspection reports, and structural analysis to determine the cause of the collapse.

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.

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.


Two Tequesta Point Redesign, Miami, FL


Two Liberty Place, Philadelphia, PA


Convention Center Expansion, Chicago, IL

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.

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


Citicorp Center, New York, NY


Port Regalle Condominiums, Staten Island, NY

LERA

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.


Espirito Santo Plaza, Miami, FL

Wembley Arena, United Kingdom

Marriott Marquis Hotel, New York, NY

LERA

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.

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.

DESIGN PROJECTS

MERDEKA 118

Kuala Lumpur, Malaysia

LERA was the structural engineer for this mega-tall development. The 2,227-ft (678.9-m), 118-story crystalline-like tower creates a new centerpiece on this historically significant site, where Malaysia's independence was declared in 1957. Topped by a dual-level observation deck, a restaurant and a 17-story, 6-star luxury hotel, the tower also contains 83 floors of office space, with a podium at its base offering retail, dining and conference space. Upon its completion, Merdeka 118 became the second tallest building in the world, offering striking panoramic views of Kuala Lumpur and the surrounding area.

The building's faceted design highlights its structural pathways, resulting in a pattern of triangular shapes reminiscent of those found in traditional Malaysian *songket* textile.

LERA provided Concept Phase through Design Development phase services, followed by peer review and select CA services. LERA led the structural engineering design of this project in collaboration with the Robert Bird Group.

Construction Cost Not Available
Completion Date 2023

Owner
PNB Merdeka Ventures Sdn. Berhad

Architect
Fender Katsalidis Architects

Images courtesy of PNB Merdeka Ventures Sdn. Berhad.

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.

Construction Cost	$2.5 billion
Completion Date	2016

Owner
Lotte Group

Architect
Kohn Pedersen Fox Associates

LERA

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

4 WORLD TRADE CENTER

New York, NY

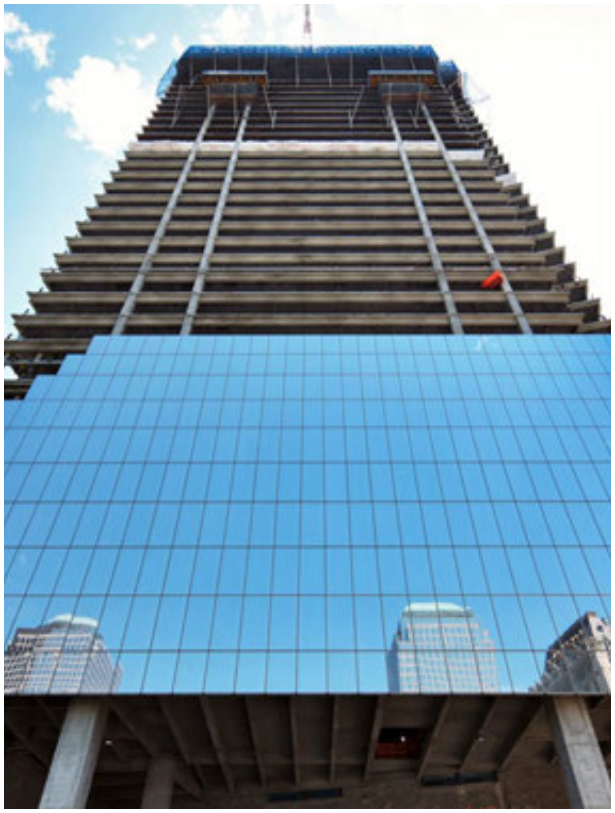
In November 2013, 4 World Trade Center became the first tower to open on the original 16-acre World Trade Center site, 12 years after the September 11 attacks. LERA worked closely with the owner and architects to realize their vision of a building that maintains a quiet, dignified presence while offering 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

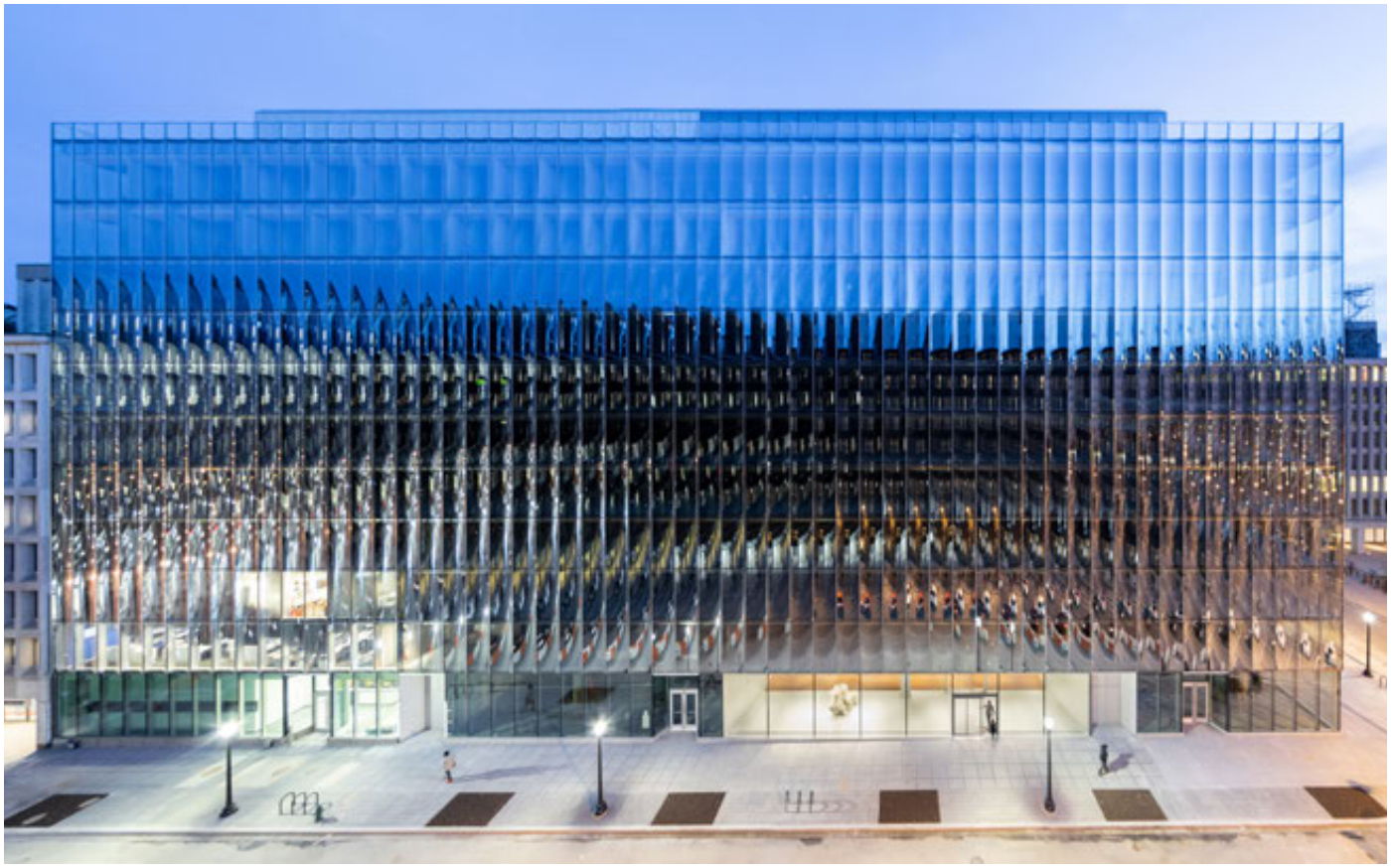
Architect
Maki & Associates – Design Architect
Adamson Associates – Executive Architect



LERA

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 $90.7 million
Completion Date 2020

Owner
Tishman Speyer

Architects
REX (Design Architect)
Kendall/Heaton (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.

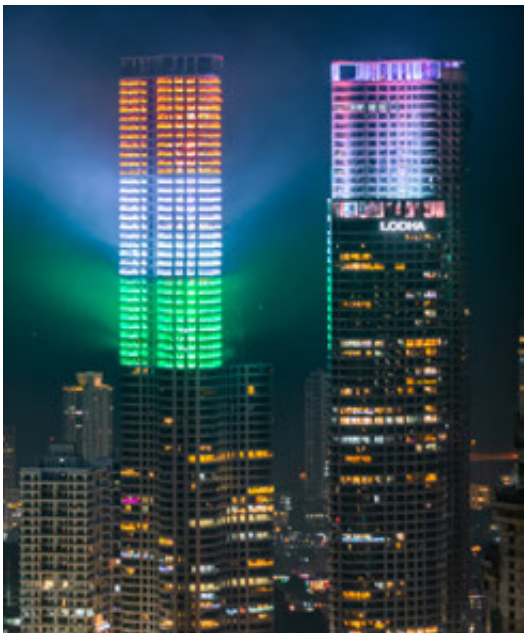
The tallest towers rise to 280-m (919-ft). The development also features a grand entrance gateway, the largest in India, a 15-m (49-ft) bridge-like arch that spans 50 m (164 ft).

LERA provided full scope of services for this project.

Construction Cost Not Available
Completion Date 2020

Owner
Lodha Realty

Architect
Pei Cobb Freed & Partners



LERA

THREE SIXTY WEST, WORLI

Mumbai, India

LERA was 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 are supported by a 4-story podium and four basement levels. The smaller tower houses the new Ritz-Carlton, Mumbai, containing 221 rooms, two fine dining restaurants, an ocean view bar, a spa and expansive banquet spaces. LERA provided full scope of structural engineering services for this project, from Schematic Design through Construction Administration.

Construction Cost Not Available
Completion Date 2021

Owner
Oberoi Realty

Architect
Kohn Pedersen Fox Associates

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

LERA

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.

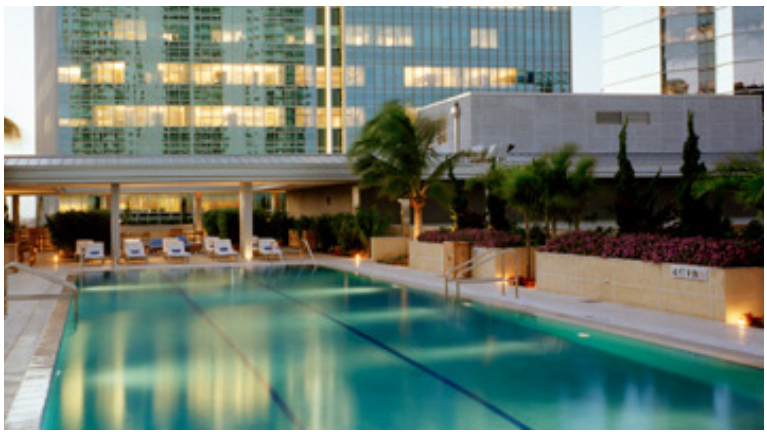
The building's mixed-use program is split into thirds: the bottom third contains office space, the middle third offers hotel space and the top third houses luxury apartments. The 755,000-sf, 37-story glass tower is linked to an adjacent 13-story parking garage by an 80-ft by 120-ft steel framed glass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

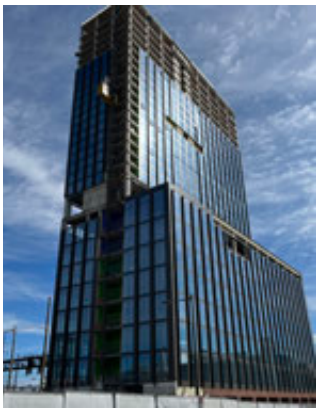


LERA

SCHUYLKILL YARDS 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 Not Available
Completion Date Under Construction

Owner
Brandywine Realty Trust;
Drexel University

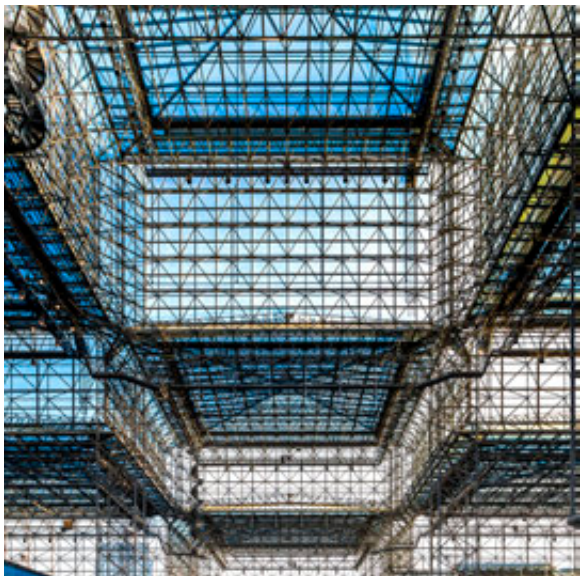
Architect
PAU – Design Architect;
HDR – Executive Architect;
CetraRuddy – Residential Architect for Sky West

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.



Construction Cost Not Available
Completion Date 2014 (renovation); Active (expansion)

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

Architect
FXFowle Epstein

LERA

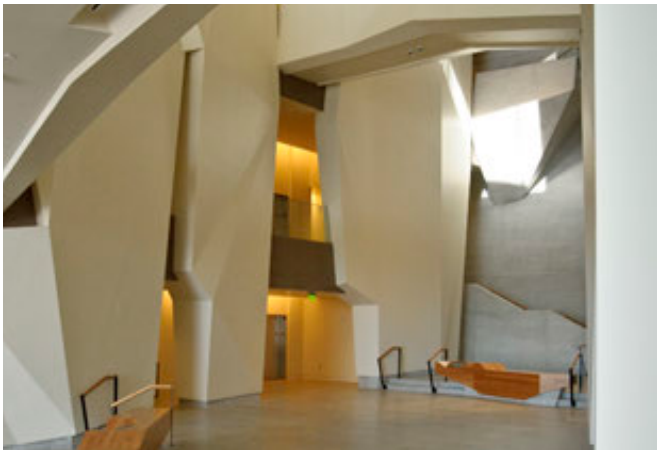
NATURAL HISTORY MUSEUM OF UTAH

Salt Lake City, UT

The Natural History Museum of Utah is built on a delicate site on the eastern edge of the University of Utah campus in Salt Lake City. The 170,000-gsf (16,000-gsm) museum includes gallery space, classrooms, research laboratories and a separate parking structure for 200 cars.

With copper façade cladding that covers approximately 42,000 sf (3,900 sm) of the building's exterior, the structure blends seamlessly into the surrounding desert landscape.

By utilizing concrete made from recycled fly ash, as well as other locally sourced materials, LERA helped the museum to achieve LEED Gold certification.



Construction Cost $103 million
Completion Date 2011

Owner
University of Utah

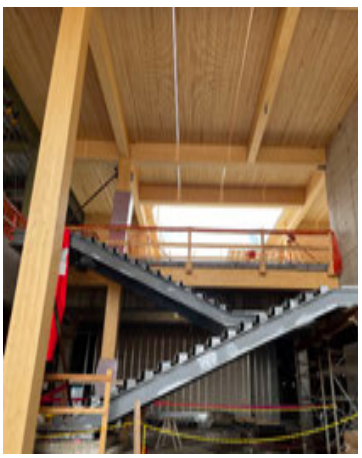
Architect
Ennead Architects

LERA

PRINCETON UNIVERSITY
ENVIRONMENTAL STUDIES + SCHOOL OF ENGINEERING AND APPLIED SCIENCE (ES+SEAS)
Princeton, NJ

LERA is the structural engineer for Princeton's new home for Environmental Studies and the School of Engineering and Applied Science. The 666,000-sf (61,873-sm) academic complex includes five buildings (ES, Commons, BioE, CBE and Theorist Pavilion), all connected underground in one continuous sequence. LERA is also providing engineering services for a utility tunnel under the BioE building as part of the site enabling work, and all of the site's landscaping elements.

The structural design maximizes the use of mass-timber construction, including DLT panels and glulam beams, and aims to minimize the embodied carbon in the project's concrete structure by specifying carbon sequestration/CO_2 injection and recycled Glass Ground Pozzolans as cement substitutions, using modest (rather than high-strength) concrete strengths, and by leaving large amounts of the concrete exposed to absorb CO_2 during its life. Additional sustainable design features include green roofs, rooftop solar arrays, efficient MEP systems, stormwater collection and management, high performance curtain wall and optimized daylight.



Construction Cost Not Available
Completion Date 2025 (estimated)

Owner
Princeton University

Architect
Ennead Architects

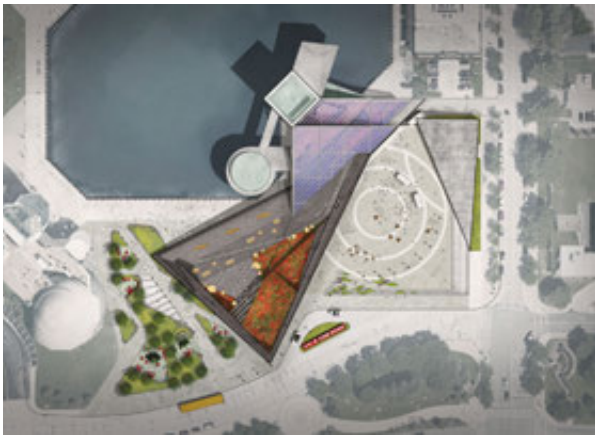
LERA

ROCK & ROLL HALL OF FAME AND MUSEUM
EXPANSION AND RENOVATION
Cleveland, OH

The 143,000-sf (13,000-sm) Rock and Roll Hall of Fame and Museum is currently undergoing a significant expansion and renovation, representing a combined 86,100-sf (8,000-sm). LERA was the structural engineer for the original facility, designed by I.M. Pei in 1995, which contains exhibition space, a cantilevered auditorium, a disc jockey booth, office space, a museum shop, a café and outdoor terrace and a public plaza. The new addition building will be made of galvanized steel and will include a rooftop deck overlooking Lake Erie, which consists of a hybrid timber-steel roof structure using CLT panels and glulam beams.

The original design 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), which engages an 8-story, 165-ft (50-m) tower containing the Hall of Fame.

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 Foster Theater cantilevers 65 ft (20 m) out from the tower over the surface of Lake Erie, 60 ft (18 m) above the lake's surface.



Construction Cost $100 million
Completion Date Active

Owner
The Rock & Roll Hall of Fame Foundation

Architect
PAU Studio

LERA

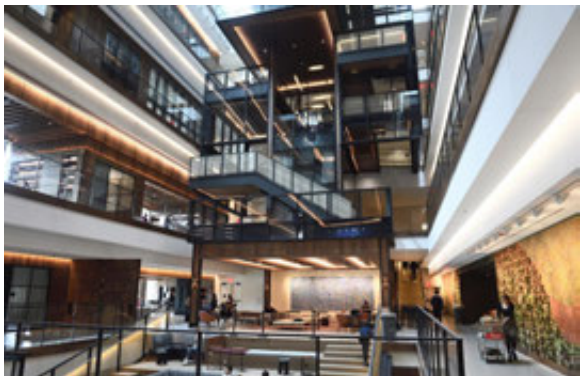
HOPKINS BLOOMBERG CENTER

JOHNS HOPKINS UNIVERSITY

Washington, D.C.

LERA led the structural design of this comprehensive renovation that transformed the existing facility, the former home of the Newseum and Freedom Forum, into a 10-story world-class academic and research center. The facility contains 300,000 sf (27,900sm) of learning space across 38 high-tech classrooms; a soaring 7-story interior atrium that features a 20-ft x 27-ft "floating" glass classroom hanging from a pair of bridge girders and a 70-ft treehouse-like stacked assemblage of classrooms and open lounges; a library; an event space; a 3,350-sf (311-sm) multimedia suite; a fitness and wellness center; a lounge with 435 seats; a 375-seat theater with a 640-sf (60-sm) stage and 7,000 sf (650 sm) of backstage support; and space reserved for a future restaurant and café. Significant reconfiguration of the floor slabs, internal circulation and façade introduced more natural daylight into the building.

LERA was also the structural engineer for the original Newseum building and attached Newseum Residences.



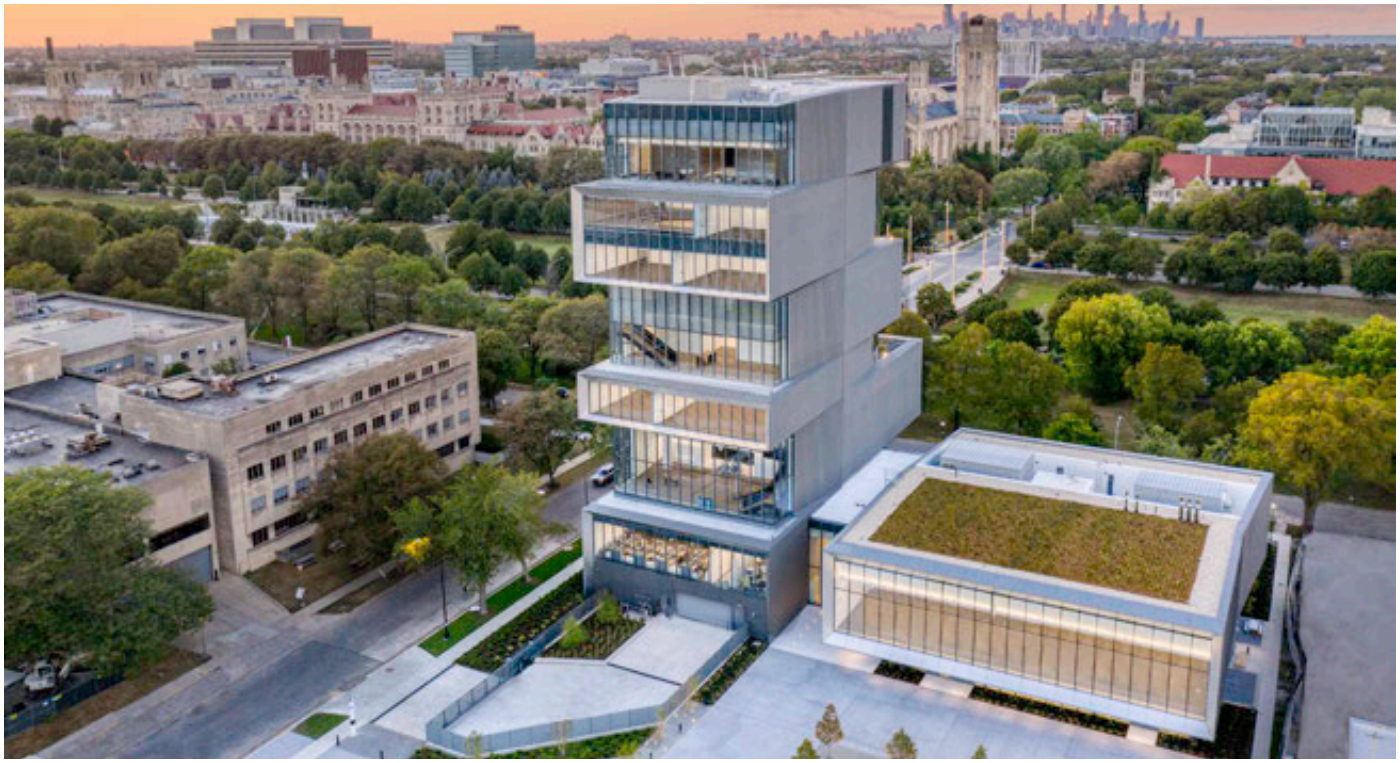
Construction Cost $275 million
Completion Date 2023

Owner
Johns Hopkins University

Architects
Ennead Architects; Rockwell Group; SmithGroup

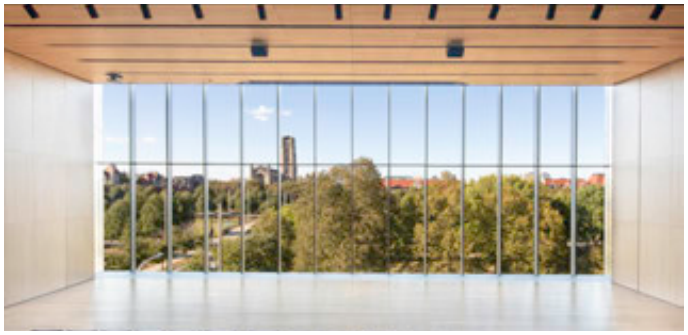
LERA

UNIVERSITY OF CHICAGO
DAVID RUBENSTEIN FORUM
Chicago, IL



LERA led the structural design of this new 97,000-sf (9,000-sm) center for intellectual exchange, scholarly collaboration and special events, consisting of a 2-story base and a 10-story tower of stacked "neighborhoods" with a zinc-and-glass exterior. A 285-seat auditorium sits above the base.

The Ground Floor contains a restaurant and a large multipurpose space capable of accommodating groups of up to 600 people. The Top Floor of the tower also features a flat-floor multipurpose space accommodating up to 75 people, and offers stunning views of the campus, the Midway Plaisance, the city skyline and Lake Michigan.



Construction Cost Not Available
Completion Date 2020

Owner
University of Chicago

Architect
Diller Scofidio + Renfro – Design Architect;
Brininstool + Lynch – Associate Architect

Awards
Platinum Award – Structural Systems, 2022
ACEC NY Engineering Excellence Awards

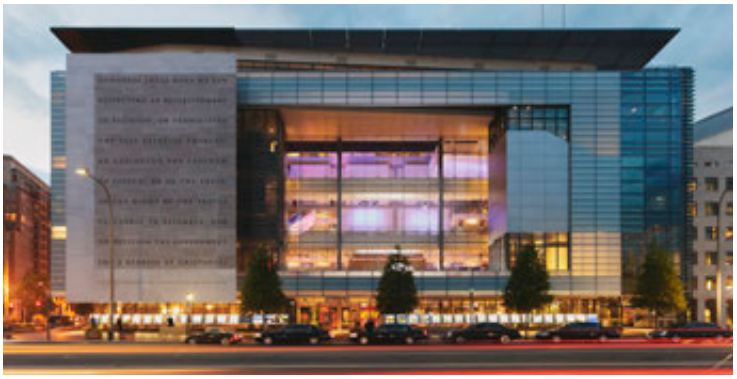
Award of Excellence – Buildings Category, 2021
Post-Tensioning Institute (PTI) Awards

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

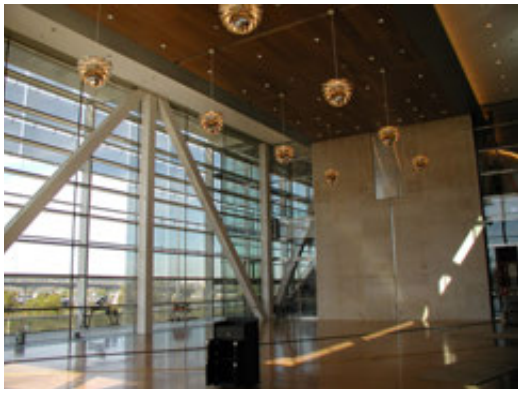
LERA

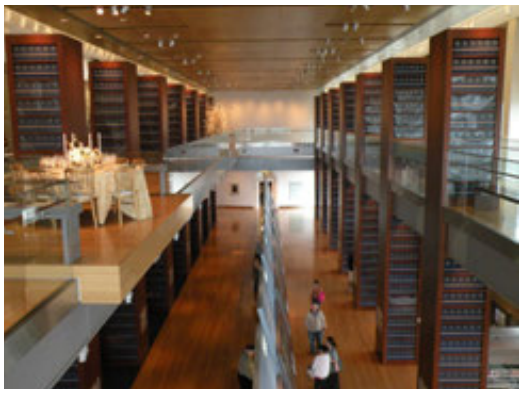
WILLIAM JEFFERSON CLINTON PRESIDENTIAL LIBRARY & MUSEUM

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

LERA

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 museum, which was completed on a fast-track schedule.

The design 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), which engages an 8-story, 165-ft (50-m) tower containing the Hall of Fame.

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 Foster Theater cantilevers 65 ft (20 m) out from the tower over the surface of Lake Erie, 60 ft (18 m) above the lake's surface.

Construction Cost $85 million
Completion Date 1995

Owner
The Rock & Roll Hall of Fame Foundation

Architect
Pei Cobb Freed & Partners

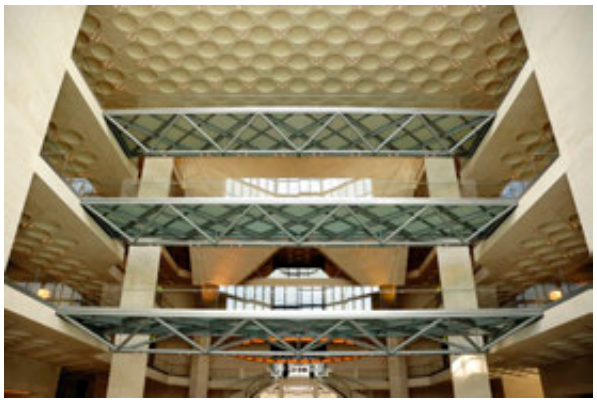
LERA

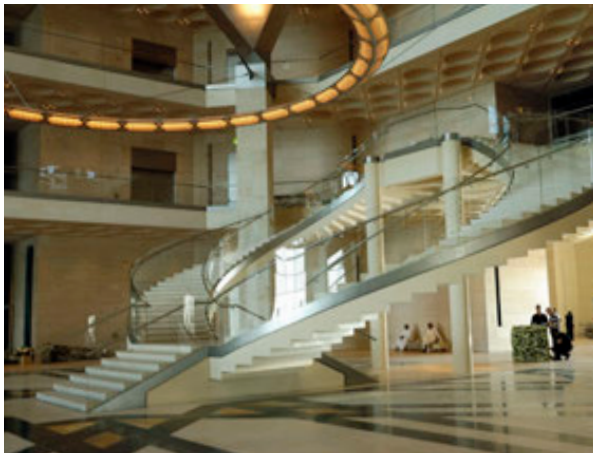
MUSEUM OF ISLAMIC ART

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

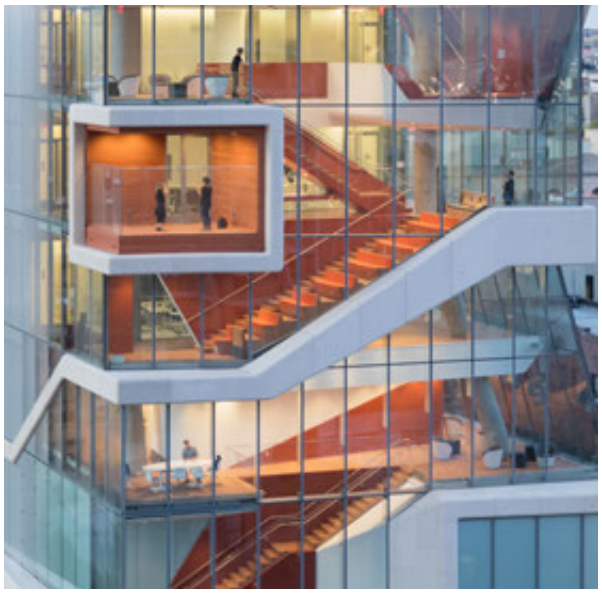
Architect
Diller Scofidio + Renfro – Lead Designer
Gensler – Executive Architect

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^2 Award (2011)
Excellence in Structural Engineering, SEAoNY (2011)

LERA

SCHEIN RESIDENCE

Woodstock, NY

LERA was the structural engnieer 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 Not Availabe
Completion Date 2012

Owner
Confidential

Architect
Barry Price Architecture

LERA

SHELTER ISLAND RESIDENCE

Shelter Island, NY

LERA was the structural engnieer 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

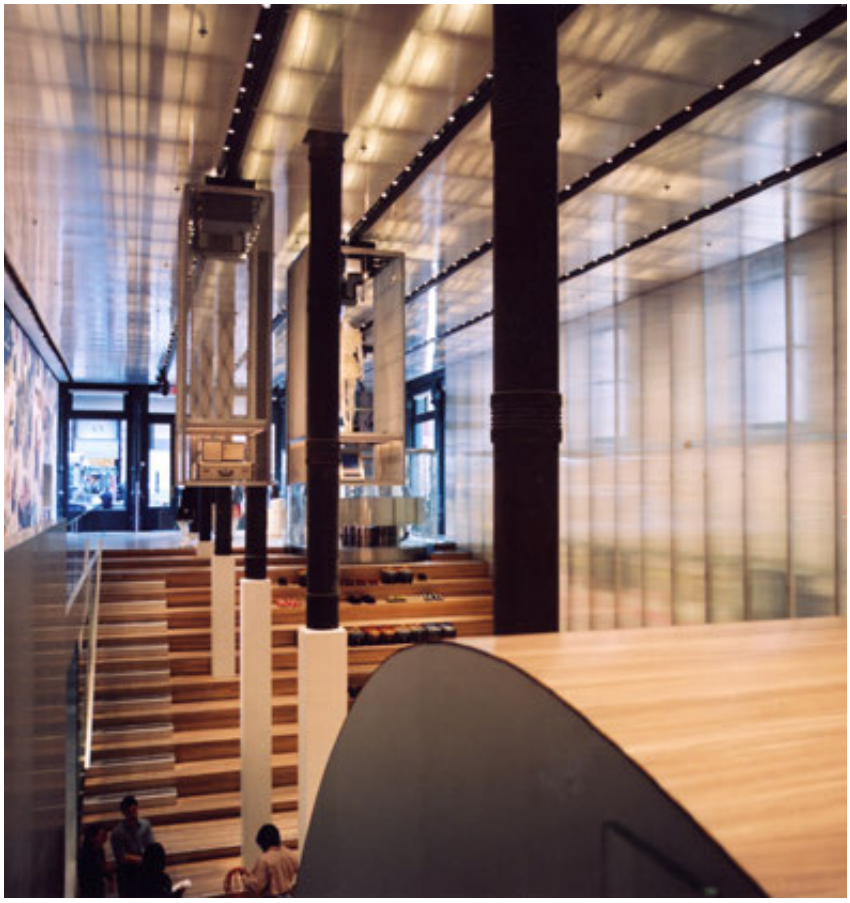
Owner
Confidential

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

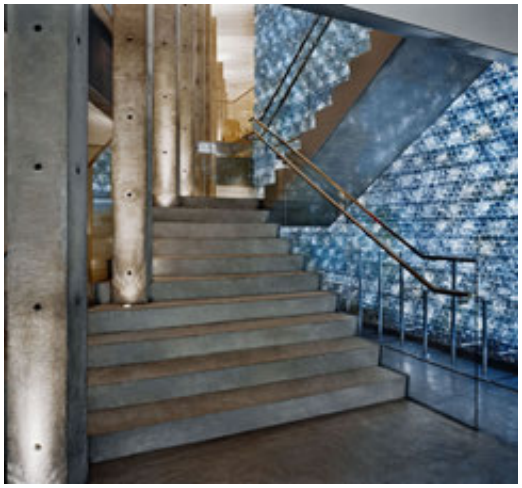
New York, NY

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

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.

Construction Cost Not Available
Completion Date 2014

Owner
Silverstein Properties

Architect
Skidmore, Owings & Merrill and
Studio Daniel Libeskind

LERA

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.

Construction Cost Not Available
Completion Date Not Available

Owner
Silverstein Properties

Architect
Foster + Partners

LERA

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)

LERA

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

LERA

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.

Construction Cost Not Available
Completion Date 2003

Owner
Silverstein Properties

Architect
Skidmore, Owings & Merrill

LERA

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

LERA

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

LERA

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

LERA

MIDTOWN EAST QUEENS

Peer Review

Long Island City, NY

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

Construction Cost $1.4 billion
Completion Date Active

Owner
Tishman Speyer

Architect
MdeAS

LERA

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 landmarked 1927 building that originally housed the Bank of Manhattan.

Construction Cost Not Available
Completion Date Active

Owner
The Durst Organization

Architect
Handel Architects

LERA

53 WEST 53RD STREET

Peer Review

New York, NY

LERA provided peer review services for this 77-story, 1,050-ft (320-m) supertall luxury residential tower in midtown Manhattan. Designed by Jean Nouvel, the 750,000-sf (70,000-sm) building contains a mixed-use program that includes gallery space, condominiums and a restaurant.

Construction Cost $1 billion
Completion Date 2019

Owner
Hines, Pontiac Land Group
Goldman Sachs

Architect
Jean Nouvel

LERA

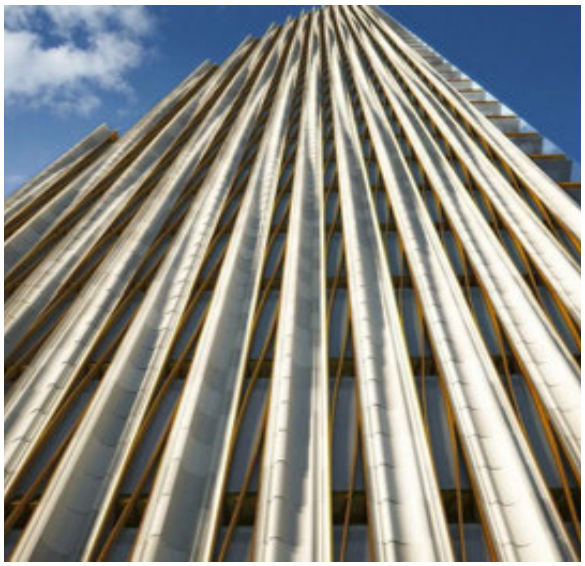
111 WEST 57TH STREET

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

LERA

225 WEST 57TH 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

LERA

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

LERA

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.

Construction Cost N/A
Completion Date Active

Owner
The Chetrit Group; JDS Development

Architect
SHoP Architects

LERA

11 HOYT STREET

Peer Review

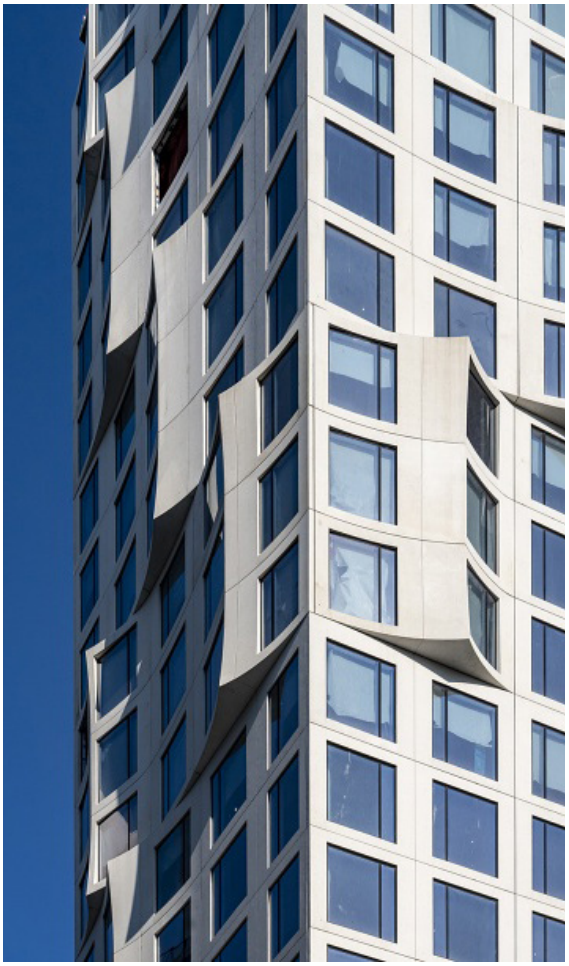
Brooklyn, NY

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

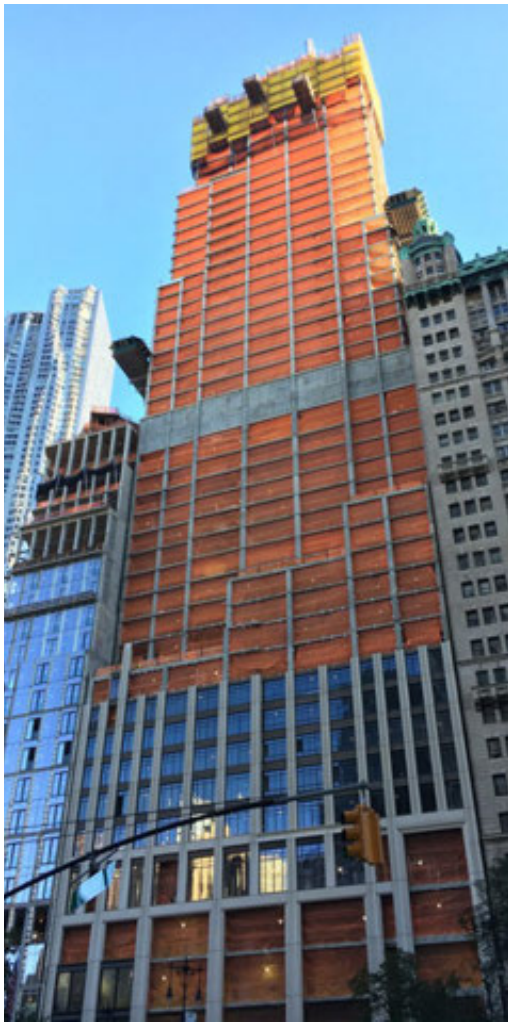
New York, NY

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

LERA

45 BROAD STREET

Peer Review

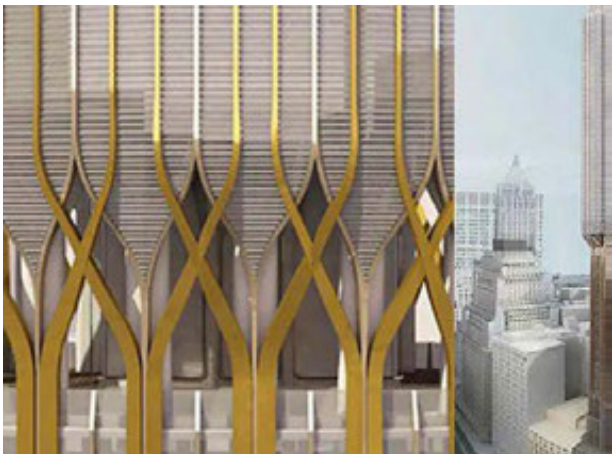
New York, NY

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 commerical space and a 94,000-sf school.

Construction Cost N/A
Completion Date 2016

Owner
Madison Equities / Gemdale Properties

Architect
CetraRuddy



LERA

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

LERA

249 EAST 62ND STREET

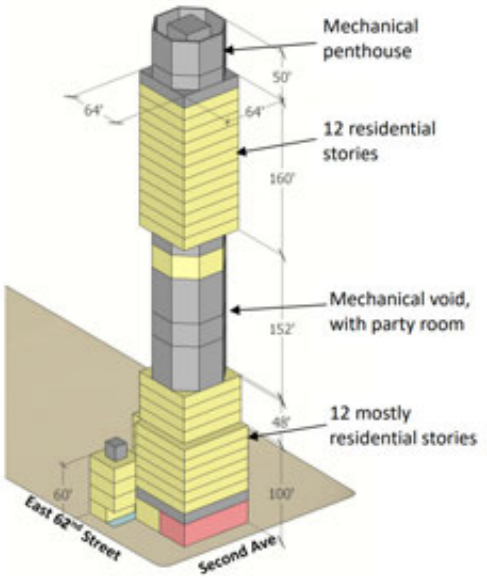
Peer Review

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



LERA

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.

Construction Cost Not Available
Completion Date 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

LERA

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

LERA

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

LERA

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.

Construction Cost Not Available
Completion Date Concept Design 2010

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

Architect
Kohn Pedersen Fox Associates

Engineer of Record
ARUP Group

LERA

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. Totaling 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

LERA

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).

Construction Cost Not Available
Completion Date Under Construction

Owner
Shui On Land Limited

Architect
Kohn Pedersen Fox Associates

LERA

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

LERA

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

LERA

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

LERA