

Exponent®
Engineering & Scientific Consulting

David Peraza, P.E.

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Professional Profile

Mr. Peraza has over 40 years of broad structural and civil engineering experience and is licensed in 17 states. His work has included investigations of major collapses, catastrophe response, diagnosis of design and construction deficiencies, damage caused by adjacent construction, condition assessments, hurricane damage investigations, design of remedial and stabilization measures for distressed buildings, design for renovation projects, and the analysis of unusual structures.

His projects have included high-rise buildings, façades, cranes, parking structures, pre-engineered buildings, industrial facilities, scaffolds, formwork, bridges, and waterfront structures.

Following the 9/11 terrorist attacks on the World Trade Center, Mr. Peraza led the emergency engineering response for the City of New York, which continued around the clock for nearly nine months and included the coordination of 39 engineering sub-consultant firms. He has led several high-profile structural collapse investigations including L'Ambiance Plaza, the Four Times Square Hoist Collapse, and the Miller Park crane accident.

Prior to joining Exponent, Mr. Peraza was Vice President with the LZA Technology division of The Thornton-Tomasetti Group.

Academic Credentials & Professional Honors

M.S.C.E., Civil Engineering, University of Cincinnati, 1986

B.S.C.E., Civil Engineering, Ohio Northern University, 1977

Recipient of the 2014 "Forensic Engineer of the Year" Award, by the American Society of Civil Engineers, Forensic Engineering Division

Guest lecturer, Columbia University, New York, NY. Courses CIEN E4212 Structural Failures: Cases, Causes, Lessons Learned, and CIEN E4210 Forensic Structural Engineering

Licenses and Certifications

Professional Engineer, Connecticut, #PEN.0024771

Professional Engineer Civil, Delaware, #14505

Professional Engineer Civil, Florida, #64521

Professional Engineer Civil, Louisiana, #PE.0040963

Professional Engineer, Maryland, #45980

Professional Engineer Civil, Massachusetts, #48872

Professional Engineer Civil, New Hampshire, #13243

Professional Engineer, New Jersey, #24GE04637200

Professional Engineer, New York, #82864

Professional Engineer, North Carolina, #032227

Professional Engineer, Ohio, #PE.46862

Professional Engineer, Pennsylvania, #PE074422

Professional Engineer, Rhode Island, #PE.0008602

Professional Engineer, Tennessee, #120857

Professional Engineer Civil and Structural, Washington DC, #PE909073

Professional Engineer, West Virginia, #24074

Professional Affiliations

American Society of Civil Engineers

American Concrete Institute

Structural Engineer's Association of New York

Professional Committees

Actively participating on task group committees of the International Association for Bridge and Structural Engineering (IABSE)

Served as member of task force that made recommendations for updating the 2014 Building Code of the City of New York

Served as member of ASCE/SEI 37 standard "Design Loads for Structures During Construction"

Served as member of ASCE/SEI 7 standard "Minimum Design Loads for Buildings and Other Structures"

ASCE Forensic Engineering Division: Past Chair of Executive Committee, and currently actively participating on committees

SEAoNY (Structural Engineers Association of New York): participated on Underpinning Task Force, 2004-2006, which provided recommendations to NYC Department of Buildings

Participated on REBNY's (Real Estate Board of New York) task force that made recommendations to NYC Department of Buildings regarding façade inspections, which resulted in Local Law 11-98

Languages

Spanish

Publications

Books and Book Chapters

Engineering Investigations of Hurricane Damage: Wind versus Water. Peraza DB, Coulbourne WL, Griffith M (eds), American Society of Civil Engineers, 2014.

Ratay RT, Peraza DB. Investigation and Analysis of Structural Collapses. In: Encyclopedia of Forensic Sciences, Second Edition. Siegel JA and Saukko PJ (eds), Vol. 2, pp. 461-465. Waltham: Academic Press, 2013.

Peraza DB. The First Steps After a Failure. Chapter 5. In: Forensic Structural Engineering Handbook, Second Edition, McGraw-Hill, 2009.

Peraza DB, Stovner E. Buildings. Chapter 6. In: Structural Condition Assessment, Wiley, 2005.

Peraza DB, Zallen RM. Engineering considerations for lift-slab construction. American Society of Civil Engineers, Reston, VA, 2004.

Peraza DB. The First Steps After a Failure. Chapter 4. In: Forensic Structural Engineering Handbook, McGraw-Hill, 2000.

Publications and Presentations

Invited presentation for Forensic Engineering Conference for University of Texas at Austin, titled “Hurricane Harvey—Flood Damage.” February 2024

Invited presentation (webinar) for University of Minnesota, titled “Lessons from Failures for Structural Engineers.” February 2024

Peer reviewed paper and presentation, titled “Analysis of Flood Water Entry to Corporate Campus,” ASCE’s 10th Forensic Engineering Congress. November 2024

Peraza DB., Failures During Demolition. Forensic Engineering Conference, The University of Texas at Austin, Cockrell School of Engineering, February 2023.

Peraza DB., Adjacent Construction—Pitfalls and Challenges. Invited presentation at Lockton General Counsel Forum, New York, NY. April, 2023

Peraza, DB., Chapter 6 in monograph “Case Studies on Failure Investigations in Structural and Geotechnical Engineering,” International Association for Bridge and Structural Engineering, Zurich, Switzerland, 2023

Peraza DB. Philadelphia Building Collapse During Demolition. Presented at Forensic Engineering 9th Congress and published in Proceedings, American Society of Civil Engineers, Denver, CO. December 2022.

Vose R., Bishop C., Peraza DB. Determining Water Damage from Storm-Created Openings After Hurricane Florence. Presented at Forensic Engineering 9th Congress and published in Proceedings, American Society of Civil Engineers, Denver, CO. December 2022.

Peraza DB., Tropicana Garage Collapse. Forensic Engineering Conference, The University of Texas at

Austin, Cockrell School of Engineering, February 2022.

Peraza DB, Investigations of Hurricane Damage: Wind vs. Water—Pitfalls and Challenges, Panelist. Florida Insurance Network Symposium, sponsored by Florida Defense Lawyers Association, Tampa, August 12, 2022,

Peraza DB, Jampole E., Parking Deck Collapse. Webinar. Metropolitan Section of American Society of Civil Engineers, April 2022.

Peraza DB, Bailey JR., Engineering investigations of hurricane damage: Wind versus water. Webinar, The Structural Engineers Association of Texas, Houston Gulf Coast Chapter, February 2021.

Peraza DB., Lessons from Failures for Structural Engineers. Webinar, TexTalks, The University of Texas at Austin, Cockrell School of Engineering, January 2021.

Peraza DB., The First Steps After a Failure: Performing a Structural Failure Investigation. Forensic Engineering Conference, The University of Texas at Austin, Cockrell School of Engineering, February 2021.

Peraza DB., 9/11 Remembered by an Engineer. Cross Sections, magazine published by the Structural Engineers Association of New York, 2021 Volume 26 No. 3

Peraza DB, Duntemann J, Pamisan F, Charney S, Forensic Engineering Workshop. Copresenter at 2019 IABSE Congress, New York, NY, September 2019.

Peraza DB, Tropicana Garage Collapse. Presented at 2019 IABSE Congress and published in Proceedings, New York, NY, September 2019.

Peraza DB., Erdem I., Bridge Collapse During Demolition. Presented at Forensic Engineering 8th Congress, and published in Proceedings, American Society of Civil Engineers, Austin, TX, December 2018.

Erdem I., Peraza DB., Investigation of Collapsed Jet Hangars. Published in Proceedings of Forensic Engineering 8th Congress, American Society of Civil Engineers, Austin, TX , December 2018.

Ibrahim Erdem, Rahul Ratakonda, and David B. Peraza. An Investigation into the Collapse of a Large Scaffold. Paper and presentation at Structures Congress 2018, American Society of Civil Engineers, held in Houston, TX.

Peraza DB., Griffith M., Engineering Investigations of Hurricane Damage: Wind v Water, Webinar presented to the Ohio Association of Civil Trial Attorneys, October 2018.

Panelist at conference, “Deteriorating Buildings: Ticking Time Bombs,” AIA Conference on Architecture 2018, June 21, 2018, New York City.

Panelist at conference, Emerging Claim Adjusting Issues in Property Insurance Markets, Claims and Litigation Management Alliance, December 2018 New York, NY.

Peraza DB. Invited speaker at ABA Regional CLE Workshop, "Handling a Construction Failure Case", New York, NY, September 2017.

Peraza DB. Co-presenter at full day pre-conference workshop, "Forensic Engineering: Structural Failures — Cases, Causes, Lessons Learned." IABSE Symposium, Vancouver, Canada, September, 2017.

Peraza DB, Griffith M. Engineering investigations of hurricane damage: Wind versus water. Webinar, American Society of Civil Engineers, April 15, 2015; February 4, 2016; October 27, 2017, July 11, 2019

Peraza DB. Quality of Hurricane Damage Engineering Reports. Invited presentation to the Engineers Joint Committee of Long Island, Plainview, NY, February 2016.

Peraza DB. The Role of Failure in Engineering Design. Invited speaker at 14th civil engineering symposium at Universidad Panamericana in Guadalajara, Mexico. May 2016,

Peraza DB. Invited speaker at ABA Regional CLE Workshop, "Handling a Construction Failure Case", Philadelphia, PA, June 2016.

Peraza DB. Engineered for Success—Remembering what Katrina and Sandy taught us about wind-versus-water reports. CLM Magazine, Claims and Litigation Management Alliance, November 2016.

Peraza DB, Coulbourne W (Instructors). Short Course: Engineering Investigation of Hurricane Damage: Wind versus Water. Presented at Forensic Engineering 7th Congress, American Society of Civil Engineers, Miami, FL, November 2015.

Erdem I, Peraza DB. A case study on a partial collapse of a building with light gage steel framing system. Presented at Forensic Engineering 7th Congress, American Society of Civil Engineers, Miami, FL, November 2015.

Ratakonda R, Dolhon A, Peraza DB. Failure of a thin limestone façade. Presented at Forensic Engineering 7th Congress, American Society of Civil Engineers, Miami, FL, November 2015.

Erdem I, Peraza D. Case study on construction defects of reinforced concrete walls with insulated concrete forms. Presented at Forensic Engineering 7th Congress, American Society of Civil Engineers, Miami, FL, November 2015.

Peraza DB. Presentation, at invitation of major insurer of residential properties, to consultant engineering firms. "Professional Engineering Issues—Engineering Damage Investigations," Illinois, June 2015.

Morgan T, DeVore C, Peraza D. Collapse of crossed pendulum ceiling systems due to unstable equilibrium. Structures Congress 2015: pp. 1730-1740, American Society of Civil Engineers.

Shrestha PL, James SC, Shaller PJ, Doroudian M, Peraza DB, Morgan TA. Estimating the storm surge recurrence interval for Hurricane Sandy. Proceedings, World Environmental and Water Resources Congress 2014: Water without Borders. Huber WC (ed) Environmental Water Resources Institute of the American Society of Civil Engineers, Portland, OR, pp. 1906-1915, 2014.

Peraza DB. Jet center hangar collapses. Invited Presentation, Design Seminar by Metal Building Manufacturers Association, Cleveland, OH, July 30, 2014.

Peraza DB. Lessons from failures for structural engineers. Invited presentation, Annual Conference of Structural Engineers Association of Ohio, Columbus, OH, September 2014.

Erdem I, Peraza D. Challenges in renovation of vintage buildings. Journal of Performance of Constructed Facilities, American Society of Civil Engineers, 2014. DOI: 10.1061/(ASCE)CF.1943-5509.0000666.

Peraza D. Collapse of jet center hangars under snow load. Presentation at the 6th International Conference on Engineering Failure Analysis, Lisbon Portugal, July 2014.

Peraza DB, Erdem I, Kane WM. Collapse of jet center hangars under snow load. Presentation to the 2014 Structures Congress, American Society of Civil Engineers, Boston, MA, April 2014

Erdem I, Peraza DB. Errors and omissions in the structural renovation of a vintage building. Presentation to the 2013 Structures Congress, American Society of Civil Engineers, Pittsburgh, PA, May 2013.

Peraza DB. Structural engineering lessons: The devil is in the details. Presentation to Boston Society of Civil Engineers, Boston, MA, November 6, 2013.

Peraza DB. Failures of light gage steel structural framing. Paper and presentation, Proceedings of ASCE 6th Forensic Engineering Congress, San Francisco, CA, November 2012.

Dolhon A, Peraza DB, Erdem I, Ratakonda R. Pre-construction surveys: Lessons learned from construction claims. Paper and presentation, Proceedings of ASCE 6th Forensic Engineering Congress, San Francisco, CA, November 2012.

Peraza DB. Distinguishing damage due to wind versus flood—An ASCE Publication. Paper and presentation, Advances in Hurricane Engineering: Learning from Our Past, Applied Technology Council and Structural Engineering Institute of ASCE, Miami, FL, October 2012.

Peraza DB. Presented at Seminar "Mitigation of Damage to Structures Adjacent to Construction Sites in Urban Environments," for Lorman Education Services, Plainview, NY, September 2011 and Garden City, NY, September 2012.

Peraza DB. Engineering issues for post-earthquake damage assessment of residential wood frame structures. Presentation to American Automobile Association, Wilmington, DE, March 28, 2012.

Peraza DB. Lessons from failures for structural engineers. American Society of Civil Engineers, Long Island Section, Levittown, NY, March 15, 2012.

Peraza DB, Ratakonda R, Erdem I. Goliath crane accident. Presentation to the 2011 Structures Congress, American Society of Civil Engineers, Las Vegas, NV, April 2011.

Ratakonda R, Erdem I, Peraza DB. Gantry crane partial collapse. International Cranes and Specialized Transport, October 2011.

Peraza DB. Co-presented seminar titled "The Adjacent Building Challenge to New Construction Projects in New York City." Sponsored by the Real Estate Board of New York, New York, NY, June 29, 2010.

Peraza DB. The case for failures. Presentation to the Forensic Engineering Symposium, Metropolitan Section of the American Society of Civil Engineers, Cooper Union, New York, NY, June 29, 2010.

Peraza DB. Forensic structural engineering: Practices and failures. Seminar presented to the New York City Department of Design and Construction, Long Island City, NY, March 18, 2010.

Peraza DB. Steel framing—Performance lessons from forensic investigations. Symposium Aging Buildings: Designing for Longevity, by Architectural Engineering Institute, New York, NY, December 9, 2009.

Peraza DB. Special problems with composite multiwythe masonry walls. Presentation and paper, Proceedings of ASCE Fifth Forensic Congress, Washington DC, November 2009.

Peraza DB, Travis J. Crane safety—an industry in flux. Presentation and paper, Proceedings of ASCE Fifth Forensic Congress, Washington DC, November 2009.

Peraza DB. Co-presented 1 ½ day seminar and workshop on Structural Forensic Engineering. Organized by ETEK (Cypriot engineering board). Cyprus, May 8-9, 2009.

Peraza DB, Wisniewski B. Evaluation of building with severe impact damage: The Banker's Trust building. Proceedings, ASCE Structures Congress, in Vancouver, BC, April 2008.

Peraza DB. Mechanisms of façade deterioration and failure. Presented at Façade Forensic Workshop as part of Architectural Engineering Institute (ASCE) Conference, Denver, CO, April 2008.

Peraza DB. Undermining and underpinning: Suggestions for minimizing damage to adjacent buildings during construction. Forum Article in Journal of Performance of Constructed Facilities, 2008.

Peraza DB. Avoiding structural failures during construction—Part 2. Structure Magazine, Copper Creek, Reedsburg, WI, February 2008.

Peraza DB. Avoiding structural failures during construction—Part 1. Structure Magazine, Copper Creek, Reedsburg, WI, November 2007.

Peraza DB. Presented the masonry portion of "Sticks and Bricks." ABA Construction Forum, Los Angeles November 2007.

Peraza DB. The first steps after a failure. Proceedings of ASCE Structures Congress, in Long Beach CA. May 2007.

Peraza DB. Structural condition assessments: Challenges and solutions. Speaker at Construction Safety Week, sponsored by NYC Department of Buildings and SEAoNY, May 3, 2007.

Presented two hour seminar "Avoiding failures during construction" at four venues:

- NYC Department of Design and Construction, June 21, 2007
- NYC School Construction Authority, July 17, 2007
- NYC Department of Buildings, October 26, 2007
- ASCE Metropolitan Section meeting, November 29, 2007

Peraza DB. Getting to the bottom of underpinning. Structure Magazine, Copper Creek, Reedsburg, WI, December 2006

Peraza DB. Strategies for structural condition assessments of damaged buildings. Structure Magazine, Copper Creek, Reedsburg, WI, August 2006.

Peraza DB. Raising the playing field-quality in the constructed facility. Catastrophe Risk Management, April 2006, London, UK.

Peraza DB. Condition assessment of buildings. Proceedings, SEI Structures Congress, American Society of Civil Engineers, St. Louis, MO, May 2006.

Peraza DB, Ratay R. Structural condition assessments—The good, the bad, the ugly. Structural Engineers Coalition of Connecticut, New Haven, CT, March 15, 2006.

Peraza DB. Condition assessment of structures following an event. ASCE Met Section Construction Group Winter Seminar, "Engineering for Disasters: Prevention and Recovery," New York, NY, March 6, 2006.

Peraza DB, Mendoca D, Stefan P. Innovation, risk, and reward at ground zero. Proceedings, SEI Structures Congress, New York, NY, American Society of Civil Engineers, April 2005.

Peraza DB. First steps after a failure. Proceedings, SEI Structures Congress, American Society of Civil Engineers, New York, NY, April 2005.

Peraza DB. Evaluation of damaged buildings. Lecture, presented to NYC Department of Buildings, March

2005.

Peraza DB. Preservation of perishable evidence. The Owner's Construction Super Conference, San Francisco, CA, December 12, 2003.

Peraza DB. Engineering response to World Trade Center Disaster. Keynote Speech, presented at AGC-DOT Conference, Saratoga Springs, NY, December 2002.

Peraza DB. Twin Tower performance. Presented at AGC-DOT, Saratoga Springs, NY, December 2002.

Peraza DB. Lessons Learned from Metal Building Collapses. Two half-day presentations, at invitation of Butler Manufacturing Co., Birminham, AL, January 2001

Peraza DB. Lessons from recent collapses of metal buildings. Presented at Cold-formed Steel Structures 2000, 15th International Specialty Conference, St. Louis, MO, October 2000.

Peraza DB. Snow Snow-Related Roof Collapses—Several Case Studies. American Society of Civil Engineers, 2nd Forensic Congress, San Juan Puerto Rico, May 2000.

Peraza DB. Practical solutions to building envelope problems. Neocon 99 World's Trade Fair, Chicago, IL, June 1999.

Peraza DB. Recycling of historic piers revitalizes Manhattan waterfront. ASCE 1997 Spring Seminar, "Just Structures," New York, NY, May 1997.

Peraza DB. Metal deck collapse: Professional liability during construction. ASCE Annual Convention and Exposition, Minneapolis, MN, October 1997.

Peraza DB. Lift-slab construction: Engineering considerations. ASCE Annual Convention and Exposition, Minneapolis, MN, October 1997.

Peraza DB. Lessons from failures II. ASCE Annual Convention and Exposition, Moderator, 1994.

Peraza DB. Assessment of cinder concrete slab construction. Presented at ACI Spring Convention, San Francisco, CA, 1994.

Peraza DB. Investigation of the L'Ambiance Plaza building collapse. ASCE Journal of Performance of Constructed Facilities, November 1992.

Peraza DB. Hartford Coliseum collapse in retrospect. Presented at ASCE Structural Engineering Congress, Chicago, IL, September 1985.

Project Experience

Design

Chelsea Piers Sports and Entertainment Complex (New York, NY): Provided structural design for conversion of four freight piers into a new facility, which includes indoor Olympic-sized skating rinks, a 4-tier golf driving range, a swimming pool, and a fitness center.

550 Madison Avenue (New York, NY): Structural design to transform 60-ft.-high public arcade into a retail plaza including a curtain wall support system. Included major structural modifications to annex building to accommodate interactive museum.

Byrne-Greene Complex (Philadelphia, PA): Design of masonry façade reskinning of 22 story federal courthouse and office complex, after performing a comprehensive investigation.

685 Third Avenue (New York, NY). Provided engineering design services for an aluminum and glass curtain wall system to overclad the façade of a 35-story building undergoing modernization.

Investigations

Panama Canal Expansion: Retained on behalf of the design engineer for the new locks to investigate the causes of cracks and leaks in the concrete, to review proposed remedial measures, and to assist with mediation.

Market Street Collapse (Philadelphia, PA): A building collapsed during demolition, killing seven bystanders and injuring others. Retained by the prosecutor and testified regarding the demolition methods and sequence in the criminal case of the general contractor.

Demolition of Major Bridge: Retained on behalf of engineers who developed the dismantling procedure for a cantilever truss bridge, after unexpected behavior. Developed opinions regarding the standard of care and the appropriateness of measures taken to complete the demolition.

Dulles Jet Center (Dulles, VA): Three fabricator-engineered hangars used for corporate jets collapsed under snow load. Retained on behalf of aircraft insurers to determine the cause(s) of the collapses.

1011 M Street (Washington DC): Retained on behalf of the construction manager after the near-collapse of a building that was in the process of being underpinned as part of adjacent construction. Performed forensic investigation and assisted attorneys until matter settled.

“Big Blue” Crane Collapse (Milwaukee, WI): Structural forensic investigation of a 567-foot crane accident at Milwaukee Brewers' baseball stadium, and damage assessment of stadium structure. Retained on behalf of the stadium ownership.

Flooding of Hospital Complex (New York, NY): Hurricane Sandy caused extensive damage to this multi-building complex. On behalf of the property insurer, determined the points of entry of flood water into each building, the path between buildings, and the timing of flooding of the basements.

Naugatuck Bridge (Naugatuck, CT): This steel-framed composite bridge collapsed during demolition, injuring the operator of a backhoe that was on the bridge. Investigated the cause of the collapse, performed analyses, prepared for trial, and assisted attorneys until it settled.

Mississippi Power Facility (Escatawpa, MS): Total collapse of 180’ high scaffold structure, that resulted in a fatality and injuries. Retained by attorneys representing the scaffold engineer and supplier. Led the investigation and analyses into the cause(s).

St. Tropez Condominium Façade Collapse (New York, NY): A large area of brick veneer fell from above the 35th floor of this building. Retained by ownership to determine the cause(s).

Four Times Square Hoist (New York, NY.): Collapse of scaffold run-back structure serving high-rise commercial building under construction. Retained on behalf of scaffolding firm that designed, supplied and installed the structure.

Tropicana Garage (Atlantic City, NJ): Parking garage collapsed during concrete placement, resulting in four fatalities and injuries. led the investigation on behalf of the general contractor

L'Ambiance Plaza (Bridgeport, CT): Two lift-slab buildings collapsed during construction, killing 28 workers. Led the forensic investigation on behalf of the City of Bridgeport. OSHA changed its fundamental finding regarding the cause, based on evidence from our investigation.

Helmsley Windsor Hotel (New York, NY): Investigated and designed remedial measures for the collapsed cinder concrete roof structure of a hotel, which resulted in a fatality. Retained by owners of the property.

Goliath Crane Accident (Quincy, MA): This gantry crane, measuring 400 feet across, was being dismantled when one of the legs collapsed and killed an ironworker. Retained by attorneys representing the ironworker to determine the cause(s) of the failure.

1185 Avenue of the Americas (New York, NY): The project consisted of the restoration of marble facade panels of a 42-story office building with a metal and glass curtain wall and marble-clad precast concrete column covers.

540 Madison Avenue (New York, NY): Performed engineering investigation into the cause of the partial collapse of this masonry façade, on behalf of insurance company for the owner.

Emergency Response

World Trade Center 9/11 Terrorist Attack (New York, NY): Coordinated all engineering work for the City of New York related to structural stabilization of the site and surrounding buildings. Coordinated 39 engineering sub-consultant firms, as well as in-house engineers at Thornton Tomasetti. Engineering services provided for nearly 9 months, on a 24/7 basis.

Castle Village Retaining Wall Collapse (New York, NY): A 75 foot high stone retaining wall collapsed suddenly onto the Henry Hudson Parkway. Directed engineering emergency response to stabilize remainder of wall and embankment to expedite reopening of the Parkway.

Editorships & Editorial Review Boards

Served as reviewer for *Journal of Performance of Constructed Facilities* (American Society of Civil Engineers)