

Gary F. Panariello, Ph.D., P.E., S.E.

Managing Principal



Summary

Dr. Panariello is a member of the Thornton Tomasetti board of directors and has oversight of the Forensics, Renewal and Property Loss Consulting practices. A recognized leader in forensic engineering, he has more than 20 years of experience in research, design, investigation and construction of complex structures of all types. His specialties include the dynamics of structures subjected to earthquakes, hurricanes and other natural and man-made events, structural failure investigations, advanced analysis and emergency response.

Areas of Technical Expertise Include

- Structural Engineering
- Forensic Structural Engineering
- Emergency Response
- Deconstruction Engineering
- Structural Stabilization

Education

- Ph.D., Civil Engineering and Engineering Mechanics, 1997, Columbia University
- M.Phil., Civil Engineering and Engineering Mechanics, 1995, Columbia University
- M.S., Civil Engineering and Engineering Mechanics, 1993, Columbia University
- B.A., Physics and Astronomy, 1986, The Johns Hopkins University, Baltimore

Registrations

- Licensed Structural Engineer (California, Massachusetts, Oregon and Washington)
- Licensed Professional Engineer (Alabama, California, Connecticut, Florida, Georgia, Idaho, Indiana, Minnesota, New Jersey, New York, Oregon, Texas, Washington and Wisconsin)
- Licensed Special Inspector (Florida)

Professional Activities

- Structural Engineering Association of New York (SEAoNY)
- American Institute of Steel Construction (AISC)
- American Society of Civil Engineers (ASCE)
- American Society for Testing and Materials (ASTM)

Teaching

- Adjunct Professor, Columbia University, 2004-2015
- Graduate Teaching Assistant, Columbia University, 1993-1997

Select Project Experience

Structural Engineering

Sherman Minton Bridge, Spans from Louisville, KY to New Albany, IN. Analysis and repair approach to reinforce a fatigue-critical bridge over the Ohio River.

Salt Domes, New York State, Department of Transportation, New York, NY. Structural inspection, evaluation and repair designs for 146 wooden stress-skin salt storage domes throughout the state.

Forensic Structural Engineering

I-35 West Bridge Collapse, Minneapolis, MN. Forensic investigation of vehicular bridge collapse, including FIM, collapse analysis and nonlinear finite element model to simulate the collapse initiation.

David L. Lawrence Convention Center, Pittsburgh, PA. Emergency response, forensic engineering, structural design and continuous on-site presence following a collapse of an elevated loading dock.

Tropicana Parking Garage Collapse, Atlantic City, NJ. Investigation to determine the cause of the cast-in-place structure's collapse during construction.

Emergency Response

303 East 51st Street Crane Collapse, New York, NY. Continuous on-site presence for emergency stabilization of surrounding structures damaged by crane collapse.

Atlanta Botanical Garden, Canopy Walk, Atlanta, GA. Evaluation of steel pedestrian bridge design and investigation of a collapse during construction.

Deconstruction Engineering

130 Liberty Street (Deutsche Bank AG), New York, NY. Engineering services and site work related to planning, engineering and deconstructing a 42-story office building damaged and contaminated on 9/11.

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Structural Stabilization

World Trade Center Disaster Site Recovery, New York, NY. Immediate damage assessment of buildings in the collapse area, assistance with demolition and temporary stabilization procedures, design of grillages, and analysis of existing structures to support construction equipment.

Sworn Testimony

Deposition, Appraisal before Judge Mark Davidson (As Umpire), Medistar Twelve Oaks Partners, Ltd. vs. American Economy Insurance Company. April 23, 2012.

Trial Deposition, Fluor Intercontinental, Inc. vs. United States Department of State. The United States Civilian Board of Contract Appeals, Washington, DC. March 8, 2011.

Deposition, Medistar Twelve Oaks Partners, Ltd. vs. American Economy Insurance Company, Safeco Insurance Company of America, Liberty Mutual Insurance Company. The United States District Court for the Southern District of Texas Houston Division. February 7, 2011.

Deposition, Fluor Intercontinental, Inc. vs. United States Department of State. The United States Civilian Board of Contract Appeals, Washington, DC. April 8, 2010.

Deposition, World Trade Center Disaster Site Litigation. United States District Court Southern District of New York. November 12, 2009.

Deposition, Euromarket Designs, Inc. d/b/a C&B vs. Aurora Contractors, Inc. American Arbitration Association. August 11, 2006.

Deposition, CC-Aventura, Inc. et al vs. The Weitz Company, LLC. United States District Court Southern District Florida. July 9, 2009.

Papers, Publications and Presentations

"Investigation of Fragment Impact and Blast Shock Wave on Window Breakage," ASCE Forensic Engineering 7th Congress, Miami, FL, November 15-18, 2015 (Co-presenter)

"Modeling Failure Progression in Structures Informed by Demolition," CFRAC 2015, the Fourth International Conference on Computational Modeling of Fracture and Failure of Materials and Structures, Paris, FRA, June 3-5, 2015 (Co-presenter)

"Informed Structures: Forensic Information Modeling Lessons Learned," Forensic Engineering, ICE, September 2014.

"Forensic investigation in the age of the internet of things," 37th IABSE Symposium, September 3rd - 5th 2014, Madrid, Spain.

"Forensic Information Modeling in Bridge Renovation: Sherman Minton Bridge," IABMAS 7th International conference on Bridge Maintenance, Safety and Management, July 7th-11th, 2014, Shanghai China.

"Evaluation of super-tall steel columns subjected to blast loading using SDOF and finite element analysis methods," 11th International Conference on Structural Safety & Reliability, New York, NY, June 16-20, 2013 (Co-author)

"Calculating Collapse: Analytical Approaches for Investigating the Cause of the I-35 West Bridge Failure," 5th International Conference for Forensic Engineering, London, UK, April 16-17, 2013 (Co-author)

"Forensic Investigation Modeling: A New Forensic Tool," ASCE Civil Engineering, January 2013 (Co-author)

"How Computers Lie: The Fact and Fiction of Computer Simulations in Court Cases," Construction SuperConference, San Francisco, CA, December 14, 2012 (Presenter and co-author)

"Forensic Investigation Modeling (FIM) Approach: I-35 West Bridge Collapse Case Study," 6th Congress on Forensic Engineering, San Francisco, CA, October 31, 2012-November 3, 2012 (Co-author)

"Discussion of Nonlinear Finite-Element Analysis of Critical Gusset Plates in the I-35 West Bridge in Minnesota," ASCE Journal for Structural Engineering, June 2012 (Co-author)

"The Causes of the I-35 West Bridge Collapse," 2011 IABSE-IASS Symposium, London, UK, 2011 (Co-author)

"The Engineering Investigation Process," Forensic Structural Engineering Handbook, McGraw Hill, Second Edition, 2010 (Co-author)

"The Role of the Structural Engineer in Risk Assessment for Privately Owned Buildings with Public Function in the USA," International Conference on Structural Safety and Reliability, Rome, Italy, June 19-23, 2005 (Presenter)

"Reduce Damage, Increase Safety," The Military Engineer, September/October 2003 (Co-author)

"Above Ground at the WTC Site: Buildings, Cranes, and Other Engineering Issues," NY Interagency Engineering Council, New York, NY, May 2002 (Co-author)

"Application of Ensemble Training of a Structural Controller to the AMD Benchmark Problem," Earthquake Engineering and Structural Dynamics, 27 (11) 1347-1366, 1998 (Co-author)

"Optimal Structural Control Via Training on Ensemble of Earthquakes," ASCE Journal of Engineering Mechanics, 123 (11) 1170-1179, November 1997 (Co-author)

Linear Optimal Structural Control Including the External Excitation, Proceedings of the 11th ASCE Engineering Mechanics Conference, 0-7844-0172-1, 760-763, 1996 (Presenter)

"Active Tendon Control Systems for Structures Subjected to Multiple Support Excitation," Smart Materials and Structures, 4 (3), 153-163, September 1995 (Co-author)

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