

Exponent®
Engineering & Scientific Consulting

Jeffrey Hunt, Ph.D., P.E.

Principal Engineer | Civil and Structural Engineering
Irvine
+1-949-242-6069 | jhunt@exponent.com

Professional Profile

Jeffrey Hunt, Ph.D., P.E., is a principal engineer in Exponent's Civil & Structural Engineering practice with over 15 years of experience in construction dispute resolution and structural failure investigation. He specializes in construction defect analysis, standard of care evaluations, international arbitration support, and seismic performance assessment across infrastructure, commercial buildings, energy facilities, and industrial structures worldwide.

Areas of Expertise

- Collapse and failure investigations
- Root-cause and origin assessments
- Construction defect investigations
- Engineering standard-of-care evaluations
- International arbitration support
- Expert witness consulting
- Seismic performance assessments

Dr. Hunt performs root-cause failure investigations and provides consulting and expert witness services for disputes between owners, design professionals, contractors, and fabricators. He has evaluated issues with steel, concrete, masonry, and wood-frame buildings as well as bridges, airports, energy facilities, parking garages, retaining walls, tanks, and industrial structures. He has investigated structures damaged by earthquake, wind, fire, snow, blast loading, water intrusion, adjacent construction, earth movement, and material degradation such as wood decay and steel corrosion.

Dr. Hunt has led investigations of construction defects, design errors and deficiencies, and building code compliance issues on domestic and international construction projects, including international arbitration disputes on projects in Australia, Asia, North America, and the Middle East. He is experienced at leading multidisciplinary teams and consulting at all stages of disputes, from developing and analyzing claims to giving expert evidence at hearings and trials. Previous projects have included evaluation of civil and structural designs for a new international airport, investigation of a highway bridge collapse that occurred during construction, analysis of construction defects in a high-rise tower, and evaluations of design issues at refineries, mining facilities, and power plants.

Dr. Hunt has evaluated construction accidents using structural analysis and computer animations. He also provides peer review services for structural design and retrofit of complex structures using performance-based earthquake engineering and nonlinear and dynamic structural analysis. Dr. Hunt is active in the earthquake engineering research community. He has served on the Earthquake Engineering

Research Institute's Board of Directors for the Southern California Chapter and currently serves on EERI's Learning from Earthquakes Committee

Academic Credentials & Professional Honors

Ph.D., Civil and Environmental Engineering, University of California, Berkeley, 2010

M.S., Civil and Environmental Engineering, University of California, Berkeley, 2005

B.S., Architectural Engineering, University of Texas, Austin, 2004

Fulbright Scholar, Universität Stuttgart, Germany, 2006-2007

IASS Hangai Prize, 2008

Popert Fellowship, University of California, Berkeley, 2008

Werner W. Dornberger Academic Excellence Award, University of Texas at Austin, 2004

Robert S. Braden Technical Communication Award, 2003

Associated General Contractors of America Scholarship, 2002-2004

Licenses and Certifications

Professional Engineer Civil, Arizona, #84006

Professional Engineer Civil, California, #79454

Professional Engineer, Kansas, #PE32352

Professional Engineer Civil, Nevada, #034192

Professional Engineer Civil, Oregon, #107606PE

Professional Engineer, Utah, #14228734-2202

Professional Engineer, Virginia, #0402070300

Professional Engineer Civil, Washington, #25021272

Professional Engineer, West Virginia, #23859

Professional Affiliations

American Society of Civil Engineers (member)

• Member, Committee on Forensic Investigations, 2021-present

• Member, Wildfire Resources Strategy Committee, 2025-present

Structural Engineers Association of Southern California (member)

• Chair, Post Disaster Performance Observation Committee (PDPOC), serving the SEAOC Earthquake Performance Evaluation Program (EPEP), 2013-2018

Earthquake Engineering Research Institute (member, 2010-present)

• Member, Board of Directors, EERI Southern California Chapter, 2016-2022

• Member, EERI Learning from Earthquakes (LFE) Committee, 2015-present

• Chair, EERI Reconnaissance Tools and Training Committee, 2014-2017

Publications

Shokrabadi M, Shusto L, Hunt J, Jokar A., Osteraas JD. Investigation techniques and analysis of damage patterns in building structures due to wildfires. Proceedings, 10th Congress on Forensic Engineering, Seattle, WA, November 1-4, 2024.

Freidenberg A, Saraf V, Hunt J, McDonald B, Osteraas JD. Load and capacity considerations for stringers in shoring towers. Proceedings, 10th Congress on Forensic Engineering, Seattle, WA, November 1-4, 2024.

Bas S, Hunt J, Gencturk B, Jampole E, Sonmezer YB, Chancellor B, Bassal P, Celiker M, Apaydin N, Sezen H. Seismic performance and damage assessment of bridges during the 2023 Kahramanmaraş, Türkiye earthquakes (M w= 7.8, M w= 7.6). Earthquake Spectra 2024.

Martin A, Jampole E, Hunt J. Numerical modeling of damaged bridges in Turkiye following the Kahramanmaras earthquake events. Proceedings, 18th World Conference on Earthquake Engineering, Milan, Italy, June 30-July 5, 2024.

Jampole E, Hunt J. Insights for the utility industry in the aftermath of the 2023 Türkiye – Syria earthquake. Western Energy Magazine 2023; 22-27.

Cappa R, Jampole E, Wham B, Hunt J, Kraus R, Chancellor B, Pehlivan M, Akinci O, Guldur B, Bayraktar M., Citipitioglu, A, Toprak S, Nacaroglu E, Ceyaln M, Bayram A. “Performance of Lifelines.” February 6, 2023 Türkiye earthquakes: report on geoscience and engineering impacts. GEER Association Report 082, May 6, 2023. Earthquake Engineering Research Institute and Geotechnical Extreme Event Reconnaissance Association (USA) and the Earthquake Engineering Association and Earthquake Engineering Foundation of Türkiye. 280-347.

Hunt J, Freidenberg A. Hanging load failures in wood beams. Proceedings, 9th Congress on Forensic Engineering, Denver, CO, November 3-7, 2022.

Jampole E, Hunt J. Structural performance factors and building damage following the 19 September 2017 Puebla, Mexico earthquake. 17th U.S.-Japan-New Zealand Workshop on the Improvement of Structural Engineering and Resilience, Applied Technology Council, Queenstown, New Zealand, 2018.

Hunt J, Osteraas J, Luth G. Innovative lateral system with mechanical fuses and strongback frames. Proceedings, 11th U.S. National Conference on Earthquake Engineering, Los Angeles, CA, June 25-29, 2018.

Weiser D, Hunt J, Jampole E, Gobbato M. M7.1 Puebla, Mexico earthquake on September 19, 2017. Earthquake Reconnaissance Team Report, Earthquake Engineering Research Institute (EERI), February 2018.

Osteraas J, Hunt J, Luth G. Performance based seismic design of the Gigafactory in Tesla time. Proceedings, Structural Engineers Association of California (SEAOC) Convention, San Diego, CA, September 13-15, 2017.

Adan S, Hunt J. SEAOC EPEP after-action perspective: 2014 South Napa earthquake. Proceedings, Structural Engineers Association of California (SEAOC) Convention, Maui, HI, October 12-15, 2016.

McDonald B, Hunt J. Thermal load-induced failure of steel space frame structure. Proceedings, 6th Congress on Forensic Engineering, San Francisco, CA, October 31-November 3, 2012.

Krawinkler H, Osteraas J, McDonald B, Hunt J. Development of damage fragility functions for URM chimneys and parapets. Proceedings, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 24-28, 2012.

Hunt J, Stojadinovic B. Seismic performance assessment and probabilistic repair cost analysis of precast concrete cladding systems for multistory buildings. PEER Report No. 2010/110, Pacific Earthquake Engineering Research Center (PEER), University of California, Berkeley, November 2010.

Hunt J, Stojadinovic B. Repair cost analysis of multistory buildings with precast concrete cladding. Proceedings, 9th US National and 10th Canadian Conference on Earthquake Engineering, Toronto, Canada, July 25-29, 2010.

Hunt J. Seismic performance assessment and probabilistic repair cost analysis of precast concrete cladding systems for multistory buildings. Doctoral Dissertation, Structural Engineering, Mechanics and Materials, Department of Civil and Environmental Engineering, University of California, Berkeley, CA, Spring 2010.

Hunt J, Haase W, Sobek WA. A design tool for spatial tree structures. Journal of the International Association for Shell and Spatial Structures 2009; 50(1):3-10.

Hunt J, Haase W, Sobek W. Designing adaptive spatial structures. Journal of the International Association for Shell and Spatial Structures 2008; 49(3):167-173.

Hunt J, Stojadinovic B. Nonlinear dynamic model for seismic analysis of non-structural cladding. Proceedings, 14th World Conference on Earthquake Engineering, Beijing, China, October 12-17, 2008.

Hunt J, Stojadinovic B, McMullin K. Modeling the effect of non-structural cladding in buildings. Proceedings, 6th Annual NEES Meeting, The Value of Earthquake Engineering Research, Portland, OR, June 18-20, 2008.

Presentations

Hunt J, Salam, S. Construction litigation through the lens of engineering: differing site conditions, design errors, and construction defects. Webinar, Beverly Hills Bar Association, September 16, 2026.

Hunt J, Akeelah K, Miller C, Ndwandwe T, Medhekar S. The three Cs for avoiding & resolving construction disputes involving GigaProjects. Dubai Arbitration Week, Dubai, UAE, November 13, 2025.

Hunt J. Los Angeles wildfires and forensic engineering. American Society of Civil Engineers (ASCE) Construction Institute Summit, Costa Mesa, CA, February 27, 2025.

Hunt J. Hanging load failures in wood beams. 9th Congress on Forensic Engineering, Denver, CO, November 3-7, 2022.

Hunt J. Innovative lateral system with mechanical fuses and strongback frames. 11th U.S. National Conference on Earthquake Engineering, Los Angeles, CA, June 25-29, 2018.

Hunt J. Performance based seismic design of the Gigafactory in Tesla time. Structural Engineers Association of California (SEAOC) Convention, San Diego, CA, September 13-15, 2017.

Hunt J. Introduction to EERI and reconnaissance; Building evaluations after EQs through the ATC-20 procedure, EERI Annual Meeting: The Really Big One: Road to Resilience, Portland, OR, March 7-10, 2017.

Hunt J. Post-earthquake reconnaissance workshop. EERI Annual Meeting: Beyond the Epicenter, Expanding Our Risk Perspective, San Francisco, CA, April 5-8, 2016.

Hunt J. Earthquake reconnaissance: Getting EERI members involved. EERI Annual Meeting: Old Cities, New Earthquakes, Boston, MA, March 31-April 3, 2015.

Hunt J, Turner F. M6.0 South Napa Earthquake: SEAOC Earthquake Performance Evaluation Program (EPEP). Structural Engineers Association of California Webinar, October 23, 2014.

Hunt J. Clearinghouse/field investigation protocols. California Earthquake Clearinghouse Meeting, Menlo Park, CA, July 30-31, 2013.

Hunt J. Recent advances in California on post-earthquake damage assessments. DrHouse Final Workshop, Alessandria, Italy, April 16-18, 2013.

Hunt J. Thermal load-induced failure of steel space frame structure. 6th Congress on Forensic Engineering, San Francisco, CA, October 31-November 3, 2012.

Hunt J. Seismic performance assessment of three precast cladding designs using the PEER PBEE repair cost methodology. SEMM Seminar, Department of Civil and Environmental Engineering, UC Berkeley, Berkeley, CA, September 20, 2010.

Hunt J. Repair cost analysis of multistory buildings with precast concrete cladding. 9th US National and 10th Canadian Conference on Earthquake Engineering, Toronto, Canada, July 25-29, 2010.

Hunt J. Designing adaptive spatial structures. Symposium IASS-2008, Shell and Spatial Structures: New Materials and Technologies, New Designs and Innovations - A Sustainable Approach to Architectural and Structural Design, Acapulco, Mexico, October 27-31.

Hunt J. Nonlinear dynamic model for seismic analysis of non-structural cladding. 14th World Conference on Earthquake Engineering, Beijing, China, October 12-17, 2008.

Hunt J. Modeling the effect of non-structural cladding in buildings. 6th Annual NEES Meeting, The Value of Earthquake Engineering Research, Portland, OR, June 18-20, 2008.

Project Experience

Infrastructure

- International Airport: Investigation of claimed deficiencies in civil and structural engineering design services for construction of a greenfield international airport in Doha, Qatar. Evaluation of whether the designer met the standard of care. Analyzed facilities include the passenger terminal, cargo terminal, vehicular and utility tunnels, site bridges, the airline operations facility, and the aircraft maintenance hangar.
- Highway Bridge Collapse: Cause-and-origin investigation of a bridge span that collapsed during construction of a 1.8-km-long reinforced concrete highway viaduct.
- High-Speed Train Viaduct: Investigation of cracking and spalling that occurred during construction of a multi-span, post-tensioned concrete viaduct for a high-speed railway.

- Vehicular Bridge Girder Collapse: Structural analysis to determine the cause of the collapse of a 215-ft long prestressed, precast bridge girder under construction.
- Pedestrian Bridges: Evaluation of the collapse of a two-span steel pedestrian bridge; investigation of alleged design defects in three 50-meter-long steel truss pedestrian bridges.
- Timber Highway Bridges: Assessment of distress in glue-laminated timber bridges and evaluation of project design specifications.
- Transit Station: Structural analysis and capacity checks for steel plate girders in the support framing for a bus terminal station.
- Airport Automated People Mover: Stability analysis for investigation of the collapse of a 60-foot-tall column rebar cage for an elevated electric train system.

Building Structures

- 26-Story Hotel and Condominium Building: Investigation of design and construction defects in a reinforced concrete high-rise building. Performed site observations, material testing, structural analysis, and experimental testing to evaluate the impacts of the defects and to develop an appropriate repair.
- 42-Story Residential Building: Investigation of the design, fabrication, and performance of concrete reinforcement (rebar) couplers, floor slab rebar, and concrete shear walls in a high-rise building. Performed analyses of failures to investigate impacts to the strength and ductility of the reinforcement bar connections.
- 37-Story Commercial Building: Evaluation of alleged deficiencies in the design and design management services for the construction of an ultra-high-performance concrete cladding system at a bank headquarters.
- 23-Story Residential Building: Analysis of claimed design and construction deficiencies in the structural supports for an overcladding system consisting of aluminum and glass façade panels.
- 4,000 Unit Housing Development: Investigation of cracking and distress to housing buildings in Southeast Asia constructed of reinforced concrete frames and masonry infill walls. Assessment of causation and scope of damage and development of repair methodologies.
- Automotive Factory: Structural analysis and peer-review services for the design of battery and automotive factory buildings. Performed nonlinear response history analyses to evaluate the seismic performance of a novel rocking frame system.
- Medical Buildings: Investigation of high-strength bolt fractures in moment frames for a new medical office building; assessment of concrete voids and rock pockets in a reinforced concrete structure for a nursing facility.
- University Campus Building: Investigation of erection tolerance issues in a steel moment-frame building under construction.
- Tilt-up Concrete Buildings: Determination of the cause of cracking in tilt-up wall panels for warehouse and commercial buildings.
- Wood-Frame Dwelling Damage Assessments: Evaluation of claimed damages to residential structures from adjacent construction, earth movement, earthquake, wind, water intrusion, fire, and material deterioration.

Mining Facilities

- Poly-Metallic Mine Facility: Evaluation of alleged design defects regarding structures/components at a mining facility, including bin hoppers, pipe racks, conveyor bridge trestles, and cable trays.
- Iron-Ore Mine Facility: Investigation of alleged design defects and procurement issues regarding the construction of crusher stations for a 55-million metric ton per year iron-ore mine.

Energy Facilities

- Solar Power Plant: Structural evaluation of alleged design errors and construction defects in a 240-meter-tall reinforced concrete tower at a solar power plant. Analysis of the effects of high-wind forces on the performance of the tower for cases with and without helically arranged fins on the tower.
- Natural Gas Processing Plant: Investigation of design errors and defects in the construction of a 30-meter tall, 370-meter long, rock-anchored retaining wall at a natural gas processing plant. Observed distress included excessive waler deformations, concrete panel detachments, and corrosion of steel components.
- High-Voltage Converter Stations: Investigation of alleged design errors and design management deficiencies regarding the construction of steel-framed buildings for two, high-voltage direct-current converter stations.
- Petrochemical Refinery: Investigation of alleged errors and deficiencies in the delivery of the structural design for a reinforced concrete, central control building at a petrochemical refinery.
- Jet Fuel Station: Assessment of the nature and extent of fire damage to steel canopy structures from an explosion and fire at a jet fuel station.
- Nuclear Power Plant Containment Structure: Investigation of delamination in a dome roof for a containment building.
- Refinery Explosion: Investigation of reported distress to building structures in the vicinity of an explosion at a large petrochemical refinery.

Other Structures

- Wastewater Treatment Plants: Root-cause analysis of the collapse of a digester tank cover; investigation of the failure of equipment at a thickener tank; assessment of concrete anomalies and cracks in the concrete dome roofs for two digester tanks.
- Parking Garages: Investigation of alleged design and construction defects at a parking garage for a casino resort; investigation of claimed damages to a subterranean reinforced concrete parking garage due to flooding from a broken water main; root-cause analysis of the partial collapse of a parking garage under construction; investigation of the collapse of a reinforcing steel column cage during construction of a rental car garage.
- Tower Crane: Investigation of damage resulting from a tower crane collapse that occurred during construction of an office building.
- Atrium Space Frame Structure: Root-cause analysis of the failure of a steel space frame shade structure.

Post-Earthquake Damage Assessments

2023 M7.8 and M7.5 Kahramanmaraş Earthquake Sequence, Türkiye – Syria

2019 M7.1 and M6.4 Ridgecrest, California Earthquakes

2017 M7.1 Puebla-Morelos, Mexico Earthquake

2016 M5.0 Cushing, Oklahoma Earthquake

2014 M5.1 La Habra, California Earthquake

2011 M5.8 Mineral, Virginia Earthquake

2010 M7.2 Sierra El Mayor, Mexico Earthquake