

DAVID R. OJALA, P.E., S.E., LEED AP, CWI

Principal



Summary

David Ojala joined Thornton Tomasetti in 2016 and has over 15 years of experience in building forensics and performance. He is a structural failure first-responder, with broad expertise in structural and geotechnical design, construction and performance. In addition, David's knowledge of structural vulnerabilities and failure investigation, coupled with his background in structural design and code development, provide him with the experience needed to provide new design, retrofit, peer review and risk consulting for complex structures. He specializes in design and analysis of long-span and tall buildings and assessment of structures damaged by earthquake, wind, fire and water. He is also a certified welding inspector (CWI) and provides both proactive and failure analysis consulting for structural and pipeline weldments. He is a frequent speaker on matters related to disaster resilience, structural safety assessment, and structural plan review.

Areas of Technical Expertise

- Structural Engineering
- Earthquake Engineering
- Emergency Response

Education

- M.S.E., Civil Eng., 2007, Case Western Reserve University
- B.S.E., Civil Eng., 2006, Case Western Reserve University

Registrations

- Licensed Structural Engineer in AK, CA and UT
- Licensed Civil Engineer in AK and CA
- LEED Accredited Professional
- Certified Welding Inspector (CWI), American Welding Society
- California Emergency Management Agency (CalEMA) Safety Assessment Program (SAP) Trainer/Coordinator/Evaluator
- FEMA Urban Search and Rescue, California Task Force 4, Oakland – Structures Specialist
- Hazardous Waste Operations and Emergency Response (HAZWOPER) training per 29 CFR 1920.120 (40-Hour)

Professional Activities

- Past Director and Secretary, Structural Engineers Association of Northern California (SEAONC); Past-Chair, Existing Buildings Committee; Past-Chair, Disaster Emergency Services Committee
- Past-Chair, Existing Buildings Committee, Structural Engineers Association of California (SEAOC); Member, Policy Committee and Resilience Committee

Select Project Experience

Investigation and Litigation Support

Port MacKenzie, AK. Large loss investigation into cause and origin of failure of novel steel sheet pile bulkhead system due to fracture of pre-fabricated junction piles.

Bypass Viaduct Collapse, Willits, CA.* Investigation of cause and origin of collapse of timber and steel falsework during construction of a major federal highway viaduct.

Confidential High-Rise, San Francisco, CA.* Peer review of performance-based design of residential 40-story concrete shear wall high-rise, as well as services during construction, including structural and geotechnical monitoring of adjacent concrete high-rise structures, surveying, review of waterproofing systems, and review of excavation support and shoring design.

Panama Canal, Panama.* Investigation into cause and origin of significant cracking and leakage of new concrete locks installed for major expansion project.

Otokumpu Stainless USA, Calvert, AL. Forensic investigation of a series of fatigue-related claims and other design and construction defects within a steel production facility.

San Diego County Central Courthouse, San Diego, CA.* Investigation into cause and origin of reported excessive structural floor framing deflections and widespread weld cracking during construction of this high-rise courthouse.

Palms Place, Las Vegas, NV.* Investigation of failure of post-tensioning strands due to interior waterproofing issues and construction defects using destructive and nondestructive methods. Presented findings for dispute resolution at mediation.

Harmon Towers/City Center, Las Vegas, NV.* Investigation of cause and impact of design and construction defects on structural performance of a prominent concrete high-rise building.

*Denotes work performed with previous employer.

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Vallourec Star, Youngstown, OH.* Investigation of widespread weld defects, roofing distress and thermal movement issues discovered during construction of massive steel mill.

Kaikoura Earthquake Response, Wellington, NZL. Performed reconnaissance and seismic damage assessments of numerous commercial, residential, institutional and government buildings throughout the Wellington region, as well as bridge and port infrastructure assessments.

Confidential Ongoing Litigation, CA. Investigation into significant material overruns and other alleged design defects in underground and above-grade structures for major design-built public infrastructure project.

Tracy Peaker Plant, Tracy, CA.* Investigation of separate incidents of fire damage to large steel air intake structure for turbine generators and defective process piping weldments along with development of repair recommendations for each.

Arkansas Nuclear One, Russellville, AR.* Investigation of cause of crane collapse during heavy equipment replacement operation, including damage assessment, evidence preservation during deconstruction, and failure analysis.

Na Pua Makani Wind Farm, Kahuku, HI.* Investigation of fire cause and origin and scope of fire damage to battery storage facility, including safety assessment of partially collapsed structure to facilitate retrieval of critical evidence and direction of controlled demolition of facility.

Sworn Testimony

Deposition, Copper River Seafoods, Inc. v. Chubb Custom Ins. Co., regarding the root cause of the partial collapse of a historic, timber- and steel-framed pier supporting a 2-story industrial building. December 14, 2017.

Select Papers, Lectures and Publications

"Rethinking the Role of Technical Experts in Pre-litigation Dispute Resolution," Forum on Construction Law, American Bar Association, 2022 (co-author)

"Earthquake Damage Assessment and Repair Guidelines for Residential Wood-Frame Buildings: Vol. 1—General Guidelines (CEA-EDA-01) and Vol. 2—Engineering Guidelines (CEA-EDA-02)," Applied Technology Council (ATC), Sacramento: California Earthquake Authority, 2020 (panelist)

"Lessons Learned & Observations from In-Field Reconnaissance After the November 2018 Anchorage, AK, Earthquake," Proceedings of the 2019 Convention of the Structural Engineers Association of California, Squaw Creek, CA, August 29, 2019 (co-author and presenter)

"Initial Lessons on Design, Response, and Recovery from the 2016 Kaikoura Earthquake," Proceedings of the 11th National Conference in Earthquake Engineering, EERI, Los Angeles, CA, 2018 (author)

"Design Guide Volume 1: City of Los Angeles Mandatory Earthquake Hazard Reduction in Existing Non-Ductile Concrete Buildings," Structural Engineers Association of Southern California, International Code Council, 2017 (contributor)

"Steel Moment Frame Bracing Criteria for Existing Wood Diaphragms, Part 1 of 2," Proceedings of the 2016 Convention of the Structural Engineers Association of California, Maui, HI, October 15, 2016 (co-author and presenter)

"Engineering Issues for Earthquake Damage Assessment and Case Studies," California Association of Independent Insurance Adjusters (CAIIA) Seminar for the Evaluation of Earthquake Damage (SEED), Sacramento, CA, July 12, 2016 (presenter)

"Structural Plan Review," Colorado Chapter of the International Code Council, Denver, CO, March 3, 2015; March 2, 2016; March 8, 2017 (co-presenter)

"Conducting Damage Assessments in Structural Engineering: ATC-20 Procedure and Case Study," Earthquake Engineering Research Institute (EERI) Earthquake Reconnaissance Workshop, EERI Annual Meeting, Boston, MA, April 3, 2015 and San Francisco, CA, April 5, 2016 (presenter)

"Performance-based Engineering and the Evaluation of Existing Buildings—Potential Legal Ramifications," Proceedings of the Second ATC & SEI Conference on Improving the Seismic Performance of Existing Buildings and Other Structures: pp. 403–415 (co-author), December 11, 2015, San Francisco, CA (presenter)

"Finite Element Modeling of Lunar Regolith Excavation," Department of Civil Engineering, Case Western Reserve University, December 18, 2006 (author)

"Dynamic, Finite Element Analysis of an Acoustic Guitar Soundboard," Department of Civil Engineering, Case Western Reserve University, May 9, 2006 (author)

CONTACT

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