

THANH DO, PH.D., P.E.

Associate



Summary

Dr. Thanh Do is an experienced structural failure analyst, investigator, and technical storyteller. He has assisted attorneys, insurance professionals, general contractors, and design professionals with failure root cause investigations and construction dispute resolution. Dr. Do specializes in Design-Build project delivery, advanced analytics, collapse investigations, standard of care assessment, construction/design defect evaluations. In addition, Dr. Do manages TT Forensic Visualization group, which produces trial graphics and physics-based animations for construction litigation. Dr. Do is also experienced in the design of new structures and retrofit of existing structures. Dr. Do is a frequent speaker and writer on matters related to construction law, dispute resolution, risk mitigation, damage assessment, and advanced simulations of failures.

Areas of Technical Expertise

- Forensic Structural Engineering
- Construction Defect
- Design-Build Project Delivery
- Physics-based Forensic Animation

Education

- Ph.D., Structural Engineering, Computational Mechanics, Mathematics, 2017, University of California, Berkeley
- M.S., Structural Engineering, 2013, University of California, Berkeley
- B.S., Civil Engineering, 2012, University of the Pacific

Registrations

- Licensed Civil Engineer in CA
- Safety Assessment Program Evaluator, California Governor's Office of Emergency Services

Teaching Experience

- Adjunct Professor, Structural Engineering, University of California, Berkeley, 2017-2018
- Courses taught: "Structural Analysis" and "Nonlinear Structural Analysis"

Professional Activities

- Reviewer, ASCE Journal of Architectural Engineering
- Committee Member, American Bar Association, Division 4: Project Delivery and Construction Technology
- Editor, "The Dispute Resolver", American Bar Association, Division 1: Construction Litigation and Dispute Resolution
- Member, Structural Engineering Association of California

Select Project Experience

Foundations

Confidential Deep Foundation Evaluation, CA. Investigated the integrity of a deep foundation supporting a high-rise building.

Confidential Excavation Evaluation, CA. Investigated excavation issues related to uncertified fills.

Slope Failure Investigation, Malibu, CA. Investigated the cause of slope failure and damage to structures and foundations, including buildings, retaining walls, decks, and seawall.

Confidential Outfall Sewer Evaluation, CA. Investigated the structural impact of bridge foundations on an adjacent sewer.

Bored Tunnets and Cut-and-Covers

Confidential Tunnel Investigation, VA. Investigated the structural adequacy of steel fiber-reinforced concrete (SFRC) tunnel segmental lining and tunnel interior structures.

Confidential Cut-and-Cover Investigation, CA. Investigated the design adequacy of the cut-and-cover structures to determine the cause of material quantity overruns.

Confidential Tunnel Cross Passage Investigation, CA. Investigated the adequacy of the tunnel cross passages to meet fire and life safety requirements.

Support of Excavation (SOE) and Retaining Structures

Confidential Investigation of Tunnel and Approach SOE, VA. Investigated issues related to the design, construction sequence, and constructability of the tunnel's SOE.

Confidential Investigation of Light-Rail Station SOE, CA. Investigated the design deficiencies of the SOE structure to determine the cause of material quantity overruns.

Confidential Evaluation of Slope Stability and Retaining Structure, Oakland, CA. Evaluated slope stability and retaining wall design for a hillside residential property.

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Collapse

Hard Rock Hotel, New Orleans, LA. Investigated the cause of collapse of the high-rise building under construction.

Tower Crane Collapse Investigation, Atlanta, GA. Investigated the failure of tower crane's counterweight system.

Buildings

Parking Garage Cracking Investigation, San Diego, CA. Evaluated a parking garage that experienced deflection and cracking in the reinforced concrete elevated slabs.

Water Intrusion Investigation, Newport Beach, CA. Investigated the cause of water intrusion of 81 detached single-family houses and evaluated the scope of repair.

Confidential Light Rail Stations Investigation, CA. Evaluated the design defects of several light rail stations to determine the cause of material quantity overruns.

Confidential Airport Structure Investigation, CA. Evaluated the structural design deficiencies, including post-tensioned floor framing, concrete shear walls, and structural steel framing.

Confidential Egress Evaluation, CA. Evaluated the noncompliant egress stairs.

Cathedral of Christ the Light, Oakland, CA. Forensic evaluation to verify the adequacy of the structural systems of this historic base-isolated structure.

Confidential Door Defect Investigation, CA. Forensic evaluation of lift-and-slide doors of a residential property.

Confidential Corrosion Evaluation, CA. Forensic evaluation of corroded building components and clogged deck.

Landslide Bridges and Pedestrian Walkways

Confidential Expansion Joint Investigation, CA. Investigated the design deficiencies of bridge seismic expansion joints.

Confidential Pedestrian Bridge Investigation, Investigated the design deficiencies of pedestrian bridges.

Hegigio Gorge Pipeline Bridge and Oil Refinery Seismic Evaluation, Papua New Guinea. Evaluated the structural damage and repair alternatives of a pipeline bridge and an oil refinery after an earthquake.

Confidential Light-Rail Aerial Guideway Evaluation, CA. Investigated the structural adequacy of several aerial structures.

Marine Structures

Confidential Marine Trestle Investigation, VA. Investigated the design deficiencies and constructability of a marine trestle.

Port of Santa Cruz, CA. Investigated the tsunami damage to the port infrastructure and opined on the scope of repair.

Confidential Cofferdam Investigation, VA. Investigated the design deficiencies of a sheet pile cofferdam.

Pavements

Pavement Slab Cracking Investigation, Bremerton, WA. Investigated the cause of cracking in a concrete pavement slab.

Confidential Pavement Slab Evaluation, VA. Investigated the design deficiencies and drawing incompleteness for a pavement slab within a tunnel and a tunnel approach structure.

Other Investigations

Pipe Support Evaluation, San Francisco, CA. Investigated the structural adequacy of piping supports in a concrete slab.

Illuminating Shell Evaluation, CA. Investigated the explosion of supposedly dormant illuminating shell.

Confidential Concrete Reservoir Evaluation, NV. Evaluated the water reservoir design, including, reinforcement design and watertightness.

Select Demonstratives and Trial Graphics

Pump Lift Station, Animation of a pump lift station that experienced a failure that led to a flooding event.

Slope Stability and Retaining Structure, Illustrations of a slope supported a hillside property and a retaining soil nail wall.

Industrial Plant, Stills and animation of industrial plant, manufacturing process, and scope growth.

Cracked Slab, Animations comparing the allegedly defective design to a typical design to explain the causes of cracking.

Façade Defects, Animation displaying wind speed distribution in the vicinity of building façade that was damaged.

Structural Steel Design Defects, Visualization of steel frames, bracing, and connections, comparing the details in the original defective design and in the subsequent retrofit.

Water Intrusion, Animations of defective waterproofing system of an underground parking garage.

Deep Foundation Construction, Animation of excavation and foundation construction sequence.

Bridge Construction, Animation of construction sequence of a precast segmental bridge.

Support of Excavation, Visualization of support of excavation system for bored tunnel, portal, tunnel approach.

Pavement Isolation Joints, Visualization of isolation joints between two abutting concrete pavement slabs that cracked.

Bored Tunnel Segmental Lining, Visualization of tunnel ring, radial and circumferential joints, and lining reinforcement.

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Select Papers, Lectures and Publications

"A Checklist for the Investigation of Concrete Slab-on-Grade Cracking," Proceeding of ASCE Forensic Engineering Congress, Seattle, November 2024 (author and presenter)

"A Picture is Worth a Thousand Words: Effective Use of Visualization in Forensic Investigations and Construction Litigation," Proceeding of ASCE Forensic Engineering Congress, Seattle, November 2024 (author and presenter)

"Shaping Perspectives: Harnessing 3D Visualization for Design, Investigation, and Legal Advocacy," American Bar Association, 2024 Fall Meeting Presentation, October 2024 (co-presenter)

"Navigating Technology in Construction Defect Investigations: Technical & Legal Considerations," American Bar Association, Division 4 Hot Topic Presentation, October 2024 (presenter)

"New Technological Tools Aiding the Investigation and Presentation of Complex Construction Claims," Construction Lawyers Society of America (CLSA) Conference, September 2024 (co-presenter)

"The Art and Science of Storytelling and Visualization in Construction Litigation," AGC of California Legal Advisory Committee May 2024 meeting (panelist)

"A View Under the Hood – Construction Defects and Forensic Investigations," 10th California Construction Law Seminar, Marina Del Rey, CA, March 2024 (panelist)

"A Picture is Worth a Thousand Words... Technical Storytelling in Construction Litigation," American Bar Association, Div. 1, The Dispute Resolver: Consultant Corner, February 2024 (author)

"Compelling Storytelling Using Forensic Engineering Visualization in Complex Construction Cases," Construction Super Conference, Hollywood, FL, November 2023 (co-presenter)

"Home Remodeling Claims: Legal and Technical Considerations," Orange County Bar Association, May 3, 2023 (co-presenter)

"Evaluation of Seismic Demand on Bridge Nonstructural Components Using ASCE 7," Fifth International Workshop on the Seismic Performance of Non-Structural Elements (SPONSE) Proceedings, Palo Alto, CA, December 2022 (co-author)

"Learning from Design-Busts: Thoughts on Risk Mitigation for the Design Consultant in the Design-Build Arena," 2022 ASCE Forensic Congress, Denver, CO, November 2022 (co-presenter)

"Lessons Learned from Recent Design-Build Disputes & Risk Mitigation Strategies for Contractors and Designers," 2022 DBIA Convention, Las Vegas, NV, November 2022 (co-presenter)

"Design-Build Standard of Care," ABA Construction Law Division 1 Toolbox Talk Series, October 2022 (panelist)

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

"Adjacent Construction Claims—Technical and Legal Framework in California," Orange County Bar Association webinar, October 2021 (co-presenter)

"Adjacent Construction Damage: Overview, Code Requirements, and Best Practices," 2021 SEAOC Convention, San Diego, CA, September 2021 (co-author and presenter)

"A Versatile Numerical Model for the Nonlinear Analysis of Squat-to-Tall Reinforced Concrete Shear Walls," Engineering Structures, September 2021 (co-author)

"Lessons Learned from Building Performance and Earthquake Response and Recovery from 2018 Anchorage, AK Earthquake," 2019 National Council of Structural Engineers Association (NCSEA), Structural Engineering Summit, Anaheim, CA, November 2019 (co-presenter)

"A Damage-Plasticity Approach for Deterioration Modeling of Steel Components," 11th National Conference on Earthquake Engineering, Los Angeles, CA, June 2018 (presenter)

"Deterioration Modeling of Steel Columns Under Variable Axial Forces," Structures Congress 2018, Fort Worth, TX, April 2018 (author and presenter)

"A Damage Model for Structures with Degrading Response," Earthquake Eng'g and Structural Dynamics, August 2017 (author)

"Damage Assessment and Collapse Simulation of Structures under Extreme Loading Conditions," Doctoral Thesis, University of California, Berkeley, May 2017 (author)

"A Damage Model for the Simulation and Assessment of Structures with Degrading Element Behavior," Structures Congress, April 2017 (author and presenter)

"Earthquake Response Evaluation with a New Hysteretic Model," 16th World Conference on Earthquake Engineering, Santiago, CHL, January 2017 (co-author)

"Diseño Sísmico de Edificios Resilientes: Aplicaciones de un Nuevo Modelo de Daño" (in Spanish), 24th Argentine Structural Engineering Conference, Buenos Aires, Argentina, September 2016 (co-author)

CONTACT

707 Wilshire Boulevard, Suite 4450
Los Angeles, CA 90017
D: 415.365.6976
M: 209.244.5936
TDo@ThorntonTomasetti.com
www.ThorntonTomasetti.com