

RUCHIKA KAUR, P.E., S.E.

Principal



Summary

Ruchika Kaur joined Thornton Tomasetti in 2007. She started her career with an emphasis on the design of new buildings. Ruchika focused on Thornton Tomasetti's Forensic Engineering practice after spending over two years in Christchurch, New Zealand where she assessed and investigated hundreds of earthquake-damaged buildings. Her experience includes damage and seismic assessment of existing facilities, remedial design for failed structures, the evaluation of construction defects, and building envelope assessments. She has also performed seismic assessments in Chile and Mexico. She has worked with both plaintiffs and defense teams. Ruchika is a member of the forensics leadership team in the San Francisco office.

Areas of Technical Expertise

- Forensic Structural Engineering
- Repair and Retrofit Design
- Seismic Evaluation
- Structural Engineering Design

Education

- M.S., Structural Engineering Mechanics and Materials, 2007, University of California, Berkeley
- B.S., Civil Engineering, 2006, University of California, Davis

Registrations

- Licensed Professional Engineer in CA, OR and WA
- Licensed Structural Engineer in AZ, CA, HI and NV
- LEED Accredited Professional
- Safety Assessment Program (SAP) Evaluator, Post Earthquake Evaluations of Buildings, California Governor's Offices of Emergency Services (CAL OES), SAPV65540

Select Project Experience

Forensic Structural Engineering

Lincoln University, Christchurch, NZL. Damage evaluation, floor damage probability maps, repairs, repair quantities, and determination of additional work required for code compliance for 70 buildings on campus. Buildings varied from one-story light framed buildings to 8-story concrete buildings.

Ebb Tide, Newport Beach, CA. Water intrusion evaluation of 81 detached single-family units in construction. The investigation included on-site observation and documentation of extent of damage, selective testing, localized demolition and repairs, and conclusions pertaining to causes of water intrusion.

Hurricane Michael, Arbor Properties, Multiple Locations, FL. Investigation of 70+ multi-family wood-framed residential buildings to assess damage caused by Category 5 hurricane.

Medistar Corporation, Houston, TX. Identify and document damage to the roof assembly, exterior envelope and interior of the building sustained by nine commercial and residential properties after Hurricane Harvey.

Confidential Retail Store Roof Collapse, Weiser, ID. Structural damage assessment, for an insurance adjuster, of a partial collapse of a retail store roof due to extensive snow storms. Project scope included emergency stabilization, evaluation of gravity and lateral elements, conceptual repair plans and the applicability of code upgrades.

GPA Cabras 3 & 4 Powerplant, Hagatna, GUM. Structural damage assessment of a powerplant building housing two 40-megawatt engine generators following an explosion and fire. Project scope included a peer review of temporary roof design, evaluation of damage and repair methodology for the structural steel framing and cladding precast panels.

Colusa Casino, Colusa, CA. Investigated construction defects associated with wood and metal stud framing, and wood trusses using trussplate connectors.

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Repair and Retrofit Design

Casa de Esperanza, Yuba City, CA. Determination of code-related provisions applicable to reconstruction of the building after a fire, and preparation of construction drawings for fire restoration of the building. The original building is a wooden structure built in the early 1900s.

SURA Post-EQ Building Evaluation, Sonora, MX. Earthquake damage assessment and retrofit design for twelve properties in Mexico City following the September 2017 Puebla Earthquake.

Bradley Nuttall House, Christchurch, NZL. Damage assessment, repair plans, analysis to determine the building capacity and prepare strengthening plans for earthquake-prone elements and allocation of earthquake-related repairs. The property is a seven-story concrete commercial building with approximately 575-square-meter-area per floor.

Seismic Evaluation

Nob Hill Condominium, San Francisco, CA. Evaluate the building for seismic vulnerabilities and prepare conceptual seismic retrofit plans. The condominium is a 19-story reinforced concrete building with three underground parking levels.

U.S. Department of Energy, Sandia National Laboratories, Buildings 904, 914, 940 and 910 Lobby, Tier 2 Evaluation, Livermore, CA. Seismic evaluation of buildings to life safety performance criteria for deficiencies identified in a previous Tier 1 evaluation. Summarized findings in a report and assessed the buildings' seismic risk level. Developed conceptual seismic retrofit sketches based on evaluations to mitigate deficiencies such that the structural systems will meet life safety performance criteria.

Structural Engineering Design

Humboldt State University, College Creek Student Housing, Arcata, CA. Structural design of eight 3-story residential buildings grouped into four complexes with covered walkways and elevator/stair cores and a 2-story community center.

Contra Costa Community College District, Contra Costa College Center Complex, San Pablo, CA. Structural design of a new classroom building and student activities complex. The classroom building is a 52,000-square-foot, 3-story structure housing computer labs, classrooms and a tiered lecture hall. The student activities complex consists of the 47,000-square-foot, 2-story main student activities building and the 3,200-square-foot Fireside Building.

NorthBay Healthcare, Green Valley Medical Office Building, Fairfield, CA. Structural engineering for a developer-led, 35,000-square-foot, 2-story precast concrete medical office building. The project required close collaboration with the design team, contractor, developer and owner to optimize design and constructibility efficiencies and identify the most cost-effective design solutions.

Alternative Dispute Resolution

Cynthia Vandever v. Fed. Ins. Co. Expert and testimony regarding an insurance dispute between a home owner and an insurance company. The matter involved determination of alleged damage to structural elements from a water pipe break. August 2024.

Self-Realization Healing Centre, Christchurch, NZL. Mediation regarding unrepaired earthquake damage and defective workmanship and appropriate repairs for earthquake-related damage for a meditation and healing center. July 2021.

Select Papers, Lectures and Publications

"Embracing One Another's Uniqueness by Building a Diverse, Equitable, and Inclusive Industry Culture," Presented to Property Insurance Claims Group (PICG) in London, UK, May 2024 (panelist speaker)

"Post-earthquake forensic investigations," Columbia University, April 2024 (co-speaker)

"Living on a Restless Planet - Impact of Earthquakes and Volcanoes on Human Development," Presented to International Association of Claims Professionals (IACP), European Conference, Italy, March 2024 (speaker)

"From post-earthquake forensics investigations to recovery-based design," Presented to UNESCO, January 2024 (co-speaker)

"Fostering & Empowering the Insurance Industry to Attract & Retain New and Diverse Talent," Presented to Loss Executive Association, Newport, RI, June 2023 (panelist speaker)

"American Building Codes," Liberty Specialty Group; Inigo Insurance; and Dale Underwriting - London Market, October 2022 (speaker)

"A Discussion on Post-Catastrophe Issues," ABA Forum on Construction Law, April 2019 (author)

"Dealing with Earthquakes: Here Come the Aftershocks," ABA Forum on Construction Law, April 2019 (panelist speaker)

CONTACT

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