

RICARDO MEDINA, PH.D., P.E.

Vice President



Summary

Ricardo joined Thornton Tomasetti in 2025. He is a structural engineering and mechanics expert specializing in the investigation and rehabilitation of structures. Ricardo is skilled in advanced analysis, performance-based engineering for earthquakes and fires, aging infrastructure management and multi-hazard risk assessment for a variety of structures, including commercial and nuclear. He has been actively involved in developing national and international standards for the seismic design of nonstructural components in buildings, as well as guidelines and standards to improve infrastructure resilience.

Areas of Technical Expertise

- Structural Engineering
- Performance-based Engineering
- Aging Infrastructure Management

Education

- Ph.D., Civil and Environmental Engineering, 2003, Stanford University
- M.S., Civil and Environmental Engineering, 1999, Stanford University
- B.S., Civil Engineering, 1997, Christian Brothers University

Registrations

- Licensed Professional Engineer in CA, FL, MA, NH

Professional Activities

- Chair, Infrastructure Resilience Division, American Society of Civil Engineers (ASCE), 2024 – present
- Chair, Resilience Committee, Structural Engineering Institute, (SEI) 2023 - present
- Subject Matter Expert, Promoting Infrastructural Health Subcommittee, National Infrastructure Advisory Council, 2024
- Associate Professor, Dept. of Civil and Environmental Engineering, University of New Hampshire, 2011 – 2019
- Guest Professor, Unit of Applied Mechanics, University of Innsbruck (Austria), 2014 – 2015
- Assistant Professor, Dept. of Civil and Environmental Engineering, University of New Hampshire, 2007 – 2011
- Assistant Professor, Dept. of Civil and Environmental Engineering, University of Maryland, 2003 – 2007

Select Project Experience

Structural Engineering

Confidential Project, TX. Investigation and structural engineering analysis of roof system at a correctional facility.

Confidential Project, AR. Structural evaluation and design retrofit of a large warehouse.

Seabrook Nuclear Power Station, Seabrook, NH.* Field support and retrofit design modifications of walls in the control and diesel generator buildings and the emergency feedwater pumphouse.

Seabrook Nuclear Power Station, Seabrook, NH.* Structural evaluation of circulating water tunnel system as seismic category-I.

McGuire Nuclear Station, Huntersville, NC.* Tornado Wind evaluations of various structures, systems and components (SSCs).

Performance-based Engineering

University of California Berkeley Gateway, Berkeley, CA.* Third-party review of structural fire engineering analysis.

Top Golf Facility, Montebello CA.* Structural fire engineering consulting services for the three-story golf facility housing 100 all-weather bays, a bar, restaurant and rooftop terrace.

Brooklyn Navy Yard, One Welding Road, Brooklyn, NY.* Structural fire engineering consulting services of roof truss structure above center bay space.

The Press Harbor, Harbor Boulevard Parcel, Press Campus, Costa Mesa, CA.* Structural fire engineering consulting services.

101 Continental Boulevard, El Segundo, CA.* Structural fire engineering consulting services, fluid viscous damper gusset plate study.

*Denotes work performed with previous employer.

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Aging Infrastructure Management

Seabrook Nuclear Power Station, Seabrook, NH.* Engineering support during Nuclear Regulatory Commission (NRC) Inspections and Advisory Committee on Reactor Safeguards (ACRS) visits.

Seabrook Nuclear Power Station, Seabrook, NH.* Prompt operability determination evaluation of service water cooling tower, control and diesel generator buildings, emergency feedwater pumphouse, structure and residual heat removal vaults affected by alkali-silica reaction.

Seabrook Nuclear Power Station, Seabrook, NH.* Structural reevaluation and re-baselining of seven safety-related structures affected by alkali-silica reaction.

Seabrook Nuclear Power Station, Seabrook, NH.* Structural evaluation of intake and discharge transition structures affected by alkali-silica reaction.

Litigation Support

Litigation Support, Ohio River (OH, KY, WV), welds in components of hydropower dams.

Litigation Support, Naval Shipyard, Philadelphia, PA,* subsidence next to a graving dock.

Mediation Support, 700 Grove Street, Jersey City, NJ,* damage to building partitions.

Claim Support, Highway 407 East, Ontario, Canada,* embankment erosion.

Select Papers, Lectures and Publications

“Probabilistic Seismic Evaluation of Reinforced Concrete Tunnel Linings Affected by Alkali-Silica Reaction,” Proceedings of SMiRT25, 28th International Conference on Structural Mechanics in Reactor Technology, Toronto, Canada, August 10-15, 2025, co-author

“Fire Resistance Design – Prescriptive and Performance – Based Approaches,” SGH NYC seminar, New York, NY, June 12, 2024, co-presenter

“Vertical Acceleration Demands in Regular Steel-Frame Structures: Recent Findings and Perspectives,” Proceedings of the 18th World Conference on Earthquake Engineering, Milan, Italy, June 30–July 5, 2024, co-author

“Structural Fire Engineering Analysis of Corrugated Steel Buried Bridges,” Transportation Research Board 103rd Annual Meeting, Washington, DC, Jan. 7-11, 2024, co-author

“Resilience in Design: Flooding and Wildfires,” American Concrete Pipe Association (ACPA) webinar, Mar. 22, 2023, presenter

“Transportation of Nuclear Fuel Rods,” American Nuclear Society–Northeastern US Section, Feb. 22, 2023, presenter

“Buckling Capacity of Nuclear Fuel Rods,” 4th International Conference on Nuclear Power Plants; Structures, Risk, Control & Decommissioning, NUPP 2022 (online), Sept. 20-21, 2022, co-author

“Digital Representation of Assets for Monitoring, Diagnostics, Prognosis, and Corrective Actions,” DOE_NRC Natural Phenomena Hazard Workshop, Oct. 18-19, 2022, presenter

“Performance-Based Alternative to Standard Fire Resistance Design,” National Park Service webinar, Aug. 2, 2022, co-presenter

“Performance-Based Design Using the Structural Fire Engineering Approach from ASCE 7-16 Appendix E – Recent Case Studies,” Society of Fire Protection Engineers (SFPE) 14th International Conference on Performance-Based Codes and Fire Safety Design Methods (virtual), Mar. 24, 2022, presenter

“Evaluation of the Floor Acceleration Response Spectra of Numerical Building Models Based on Recorded Building Response Data,” Journal of Earthquake Engineering, 2021, co-author

“Resilience, Functional Recovery, Sustainability – What Are They & What Do They Mean for the Structural Engineering Profession?” National Institute of Building Sciences – Building Innovation, virtual edition, Sept. 27, 2021, panelist

“Engineering Design Framework for Enhanced Resilience of Roadways at Culvert Crossing Exposed to Floods or Wildfires,” Transportation Research Board 101st Annual Meeting, Washington, DC, Jan. 9-13, 2021, co-author

“Performance-Based Alternatives to Standard Fire Resistance Design,” SGH webinar, Feb. 26, 2021, co-presenter

“The Value of Resilience,” Turner Resiliency Webinar #7, Nov. 2020, co-presenter

“Balancing Flood Mitigation and Preservation of Historic Buildings,” SGH Evening Seminar, Washington, DC, Mar. 11, 2020, co-presenter

CONTACT

Ricardo Medina, Ph.D., P.E.
101 Arch Street, Suite 1600 Boston, MA 02110
781.296.1598
RMedina@ThorntonTomasetti.com
www.ThorntonTomasetti.com