Post-Earthquake Consulting
Walter P Moore is an international company of engineers, architects, innovators, and creative people who solve some of the world’s most complex structural and infrastructure challenges. Providing structural, diagnostics, civil, traffic, parking, transportation, enclosure, and construction engineering services, we provide solutions that are cost- and resource-efficient, forward-thinking, and that help support and shape communities worldwide. Our professionals work across 20 U.S. offices and five international locations.

We’ve designed some of the world’s largest and most sophisticated projects. Complex engineering is in our DNA.

With 20 U.S. offices and five international locations, we routinely evaluate and repair structures in highly active seismic zones.

The licensed professional engineers at Walter P Moore have one thing in common: a passion for what we do. In the face of challenges, we deliver.
Walter P Moore’s earthquake engineering experts mobilize within hours of a seismic event to conduct damage assessments. We create tailored, digitally delivered reports after our site visits, and stay within reporting guidelines and defined budgets. Walter P Moore provides structural engineering services worldwide for structures located in high seismic zones. Our programs include design improvements to existing structures, as well as modeling risks in the world’s most vulnerable, active fault regions.

Services Offered

- Emergency response
- Earthquake and utility vulnerability assessments
- Seismic hazard exposure screening
- Structural and enclosure reviews
- Cause and origin investigation
- Building code evaluation
- Dispute resolution support
- Scope of damage determination

Walter P Moore’s experts identify patterns of damage, diagnose failures, and document collapse mechanisms. We also determine the types of structures that performed well during an earthquake event. We use the data to help reduce future seismic risk, as well as inform future risk modeling criteria.
Our technical staff, comprised of 260+ licensed professional engineers, are industry-recognized experts in seismic design for new buildings and existing structures. We develop and train our engineers to understand the conditions surrounding losses, as well as how to best help clients restore their facilities and businesses. We maintain certifications and licenses to assess structures for pre-loss evaluations and post-loss surveys.

Walter P Moore is strategically located to respond to CAT events. We have 20 U.S. and five international locations. Due to the nature of forensic services, we are organized to respond to our clients’ needs within 12 to 24 hours upon notice of emergency. Depending on the project, this time may be reduced even further to address life-safety or other critical issues.

We are always on call for our clients.
Catastrophic Event Deployment

Walter P Moore deploys teams of experts to locations that have experienced a catastrophic (CAT) event. We have knowledgeable team members that help expedite the insurance claims process. Post-earthquake assessment projects require immediate mobilization, as well as intensive logistics and planning. We focus on assessing the structural integrity of the facilities we evaluate, and provide technical direction on structural safety. If a repair or retrofit is necessary, we typically execute a re-design with more reliable seismic parameters. We have deep knowledge of the seismic performance of various structural systems in buildings of all types—including historic structures, civic buildings, schools, hospitals, laboratories, offices, and warehouses, as well as commercial, industrial, and aviation facilities.

Event Responses

Failures in the built environment range from performance failure due to hidden structural or enclosure-related issues to collapse from a catastrophic event. Minimizing risk and preventing further damage are our priorities after a catastrophic (CAT) event. Walter P Moore provides forensic services to determine the failure cause through analysis, field assessments, and testing. Additionally, we provide expert witness testimony for legal proceedings and insurance claims.
With offices across the U.S., Panama, Canada, and India, we have extensive experience in structural design for highly seismic zones. We’ve also provided post-earthquake assessments in México, Japan, Colombia, Chile, Paraguay, Nepal, California, Oklahoma, Washington, DC, and Puerto Rico. After an earthquake event, we provide emergency response to ensure structural safety. Our firm has the expertise to design more seismically resilient structures that perform better in future seismic events.
San Francisco International Airport

The new iconic Air Traffic Control Tower at San Francisco International Airport (SFO) features innovative seismic engineering that provides both toppling resistance and a self-centering capability. Walter P Moore was the structural engineer for this tower that can remain fully operational throughout a magnitude 7.5 earthquake.
Projects

PUERTO RICO

Walter P Moore engineers mobilized to Puerto Rico after a sequence of seismic events, including a strong 6.4 magnitude earthquake that struck the southwestern part of the island in early January 2020. Our team conducted assessments on industrial facilities located in Bayamon and residential buildings located in Ponce. Walter P Moore identified earthquake-related damage to structural elements and determined if buildings were safe to reoccupy. We summarized our findings and recommendations in detailed reports.

MÉXICO CITY

After a powerful 7.1 magnitude earthquake struck México City in September 2017, Walter P Moore engineers arrived in the city the next day at our client’s requests to assess buildings and determine if conditions were safe enough to reoccupy. Assessments were done on an industrial complex and four of the tallest structures in México City, including the Torre Mayor and Torre Reforma. Our visual walkthrough assessments determined the buildings’ lateral force resisting systems and identified earthquake damage. Our rapid response and assessment time allowed our clients to reoccupy their buildings with confidence.

NEPAL

Nepal experienced its worst disaster in more than 80 years in April 2015—a magnitude 7.8 earthquake with an epicenter in Gorkha, and then a magnitude 7.3 aftershock on May 12, with an epicenter near Kodari. Walter P Moore provided early response to assess the structural damage of houses, commercial buildings, and light industrial buildings. This effort was sponsored by a coalition of Non-Governmental Organizations (NGOs) called Nepal Earthquake Rapid Response.

NAPA AND VALLEJO, CA

Walter P Moore was deployed for earthquake damage assessments in Napa and Vallejo, California in August 2014, just two days following the area’s worst earthquake since 1989. We were part of a team deputized by Napa city officials—a mix of engineers, architects, and building inspectors. Our scope involved tagging residential buildings—a mix of single-family and apartment buildings. Napa had not enacted mandatory seismic strengthening ordinances for their unreinforced masonry buildings (URM) like larger cities in California, and as a result, substantial risks remain.
Key Experts

Gabriel Jimenez, PhD, PE, PEng, SE, FSEI
As Executive Director of Walter P Moore’s Diagnostics Group, Gabriel ensures the delivery of quality diagnostic and forensic engineering services. Gabriel was named a Fellow of the Structural Engineering Institute and has award-winning projects recognized by technical organizations. He received his doctorate in Civil Engineering (Structures) from the University of Minnesota. He is a licensed engineer in 12 U.S. states and three Canadian provinces.

Mark Williams, PhD, PE, PEng, SE
Mark is Walter P Moore’s Restoration and Renovation Practice Leader. With 14 years of structural engineering analysis, design, and management, his award-winning projects encompass bridges and forensic studies. Mark is a licensed engineer in California, Washington, Oregon, and nine additional U.S. states and Canada. Before earning his doctorate at the University of Florida, he received his Master of Science (Structures/Foundations) and a Bachelor of Science from the University of Central Florida.

Rafael Sabelli, PE, SE
A recognized, award-winning industry leader in seismic design solutions and regulations, Rafael focuses on improving how buildings sustain earthquakes. He is widely published on topics related to the seismic design of important buildings and is a licensed engineer in California, Nevada, Oregon, and Washington. Rafael earned his Master of Architecture and Master of Civil Engineering from the University of California in Berkeley.

Michele Cyr, PhD, PE
With more than 15 years of experience in the field of forensic engineering, Michele brings her expertise to post-disaster, structural damage assessments, following earthquakes, hurricanes, and fires, with emphasis on concrete and cement-based materials. She also has experience with demolition engineering and an extensive background in characterizing the behavior of cement-based materials through mechanical testing and microstructural analysis. Michele has a doctorate in Structural Engineering and Materials and is a licensed engineer in California and New York.
**Chris Kahanek, PE, SE, RA**

Chris is an expert in structural and envelope design in highly active seismic zones. His 14+ years of forensic engineering in the United States, Middle East, and New Zealand demonstrate his skills in assessing and designing repairs after CAT events for government entities, property managers, and insurance companies. He is a licensed engineer in California (PE/SE), Nevada (PE/SE), Hawaii, and Arizona. Chris is also a registered architect that earned a Bachelor of Science in Architectural Engineering and a Bachelor of Architecture from the University of Texas at Austin.

**Clint Etzel, PE, SE**

Clint has more than 13 years of experience in structural, seismic, and forensic engineering, as well as a deep understanding of how seismic behavior should affect structural evaluation and design. His focus on strengthening structures is balanced with maintaining seismic performance during catastrophic events. He is responsible for training our diagnostics engineers for ASCE 41 tier seismic evaluations. Clint is a licensed professional/structural engineer in California, and received a Master of Engineering in Civil Engineering from the University of Texas at Austin.

**Kyle Dominisse, PE, SE, LEED AP**

Kyle routinely performs post-earthquake assessments, litigation studies, and develops repair details for renovation projects. Kyle received a Master of Science in Civil Engineering from Virginia Polytechnic Institute and State University, and a Bachelor of Science in Civil Engineering from the University of Nebraska. He is a licensed engineer in California and Missouri, as well as four additional U.S. states.

**Luis Buitrago, PE**

Skilled in performance-based seismic design in México and Central America, Luis has spent almost a decade focused on the design of commercial, residential, and industrial facilities for the private and government sectors in Panama. He obtained his Bachelor of Science in Civil Engineering from the Technological University of Panama and a Master of Civil Engineering (Structural/Geotechnical) from the University of Arkansas. He is also a licensed engineer in Panama.
Contact us to deploy seismic consultants to worldwide locations.

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