





# Structural Engineering

IMPROVING, MAINTAINING AND PRESERVING YOUR VALUABLE ASSETS.

Marx|Okubo's Structural Engineering Group knows your real estate portfolio is a substantial investment, and growing its short- and long-term value means staying on top of the property's physical condition in order to properly improve, maintain and preserve it.

- Owner's Representation
- Property Condition Assessment
- Project Management
- Constructability Reviews
- Repair | Reconstruction
- Facility Condition Assessment
- Construction Loan Monitoring
- Accessibility
- **Building Enclosure**
- Fire | Life Safety

- Mechanical | Electrical | Plumbing
- Resiliency
- Structural Engineering
- Sustainability
- ASAP® Automated Structure Alert Program



## Key structural engineering services:

### > Property Consulting

Seismic evaluation
Seismic/wind risk assessment
Structural condition assessment
Seismic retrofit project review
Earthquake resiliency studies
USRC ratings

#### > Construction Servies

Structural repair/retrofit design
Seismic retrofit scheme development
Retrofit benefit-cost analysis
Structural preliminary project review
Structural value engineering review
Constructability studies
Peer review
Materials testing monitoring

### > Forensic Investigation

Building failure
Construction defects
Foundation settlement
Structural damage
Material deterioration
Moisture intrusion



### We consult to limit your exposure now, giving you greater confidence in your decisions for the future.

Marx|Okubo understands buildings and where they are vulnerable. We are realistic and sensitive to our clients' economic and operational issues and how those play into the upgrade or repair equation. As Marx|Okubo is multidisciplinary and takes 360-degree approach, our experienced/credentialed Structural Engineering Group is already informed and trained to consider the bigger-picture—the industry and all disciplines involved, local economies and competition—in order to reduce your risk, maximize your investment and ensure nothing is missed. In the process, we are keenly aware and respectful of our industry's demand for accountability—to adhere to budgets and schedules with attention to detail.

Our specialized in-house group is staffed with licensed structural and civil engineers who have expertise in all aspects of analysis and design. We can evaluate a building's condition, diagnose causes of degradation or failure, conduct seismic assessments and develop strategies to renovate, repair or retrofit, as well as perform new construction services and resiliency studies.

### **Project Examples**

### **Palace Hotel Garage**

Client: **Kyo-Ya Management, Ltd.**Location: **San Francisco, California**Service: **Seismic Retrofit Design** 

Following San Francisco Building and Planning Department guidelines, Marx|Okubo conducted a seismic evaluation and completed the retrofit design for this 100-year-old historic hotel's structure within a very short construction schedule, while creating considerable cost and time savings over hiring separate design companies in a conventional design-bid-build project system.

### **Bank Square**

Client: Withheld Location: California

Marx|Okubo led a repair design and reconstruction effort on this seven-story, above-grade parking structure, which was experiencing deterioration related to issues concerning its initial construction. Excessively-deflecting beams and exposed post-tension cabling in this operational garage's decks required careful evaluation and planning to minimize disruption to users while providing a cost-effective solution that addressed the areas of concern. Our solution allowed for a safe, integrated approach that addressed the structural elements as well as architectural and accessibility-related concerns.

#### One Panorama Center

Client: Prudential Real Estate Investors

Location: Irving, Texas

Service: Parking Garage Slab Water Retention Issues

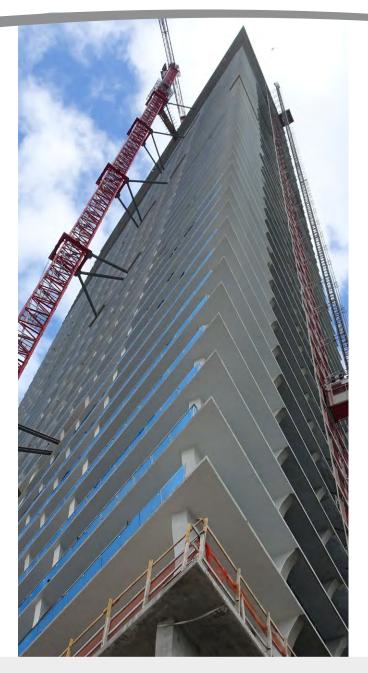
Marx|Okubo led a repair design and reconstruction effort on this recently constructed garage that had begun showing signs of unusual and excessive slab heaving and unevenness. Our investigation efforts led to an effective solution that involved slab demolition, base material remediation and doweled reconstruction tying the new elements into the existing structure. Our efficient work provided for a quick solution that restored the usability of this critical property resource.







Our structural engineering team helps owners, investors and lenders understand the risks and opportunities inherent in each property.



Marx|Okubo is a national AEC consulting firm that works with real estate owners, investors and lenders—at every point of the property lifecycle—to **evaluate** their building projects, **solve** complex challenges and **implement** tailored solutions.

We help clients understand their projects' complexities, so they can make more informed decisions and, ultimately, mitigate their risk.

Denver • Seattle • San Francisco • Pasadena • Orange County • Dallas • Atlanta • New York satellite: Portland • San Diego • Houston • Chicago • Boston • Washington, D.C. • Miami



