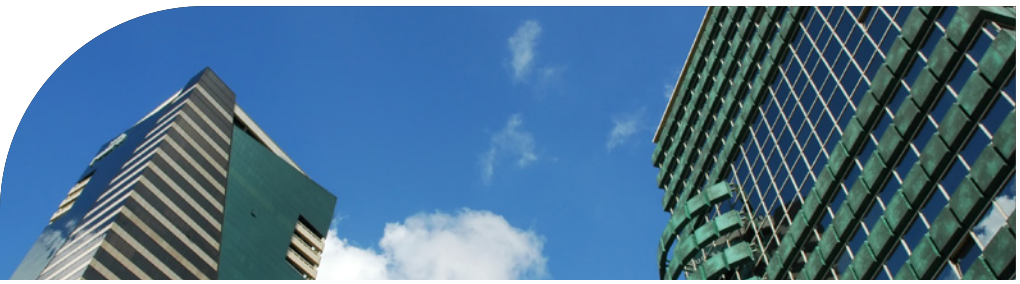

Resilience

Dedicated to identifying and minimizing natural disaster risks, while maximizing continuity of operations.

Marx Okubo works with investors, owners, tenants, and property managers during site selection, design, construction, operations, and event response activities to identify property risks, understand how to reduce risks and repair costs, and maximize the continuity of operations of a property. With our in-house resiliency specialists, we are committed to evaluating and improving the built environment's response to climate-related natural disasters and assisting clients to ultimately create assets that are passively survivable and supportive of the surrounding communities.

Through an understanding of climate risks and building science and operations, Marx Okubo can help determine how a building will likely respond to potential hazard events. Our team works with a client to determine an acceptable level of physical, operational, and transitional risk and provide recommendations on how the property or operations can be altered to future-proof their properties or meet portfolio-specific goals.

Our in-house resiliency team is a dedicated group of professionals, including licensed architects and engineers, who specialize in identifying potential physical and social vulnerabilities of the built environment, as caused by natural hazards. Physical hazards include earthquakes, flooding, hurricanes, wildfires, severe winter storms, and tornadoes.

We consult on all phases of a building's lifecycle to anticipate and develop solutions for a variety of natural events. We are focused on how the design and construction, pre-event operations, and post-event response can reduce repair costs and maximize the continuity of a property's operations. Ultimately, as climate risk exposure levels can influence insurance costs, capital improvement costs, and overall integrity of buildings across a portfolio, clients need to perform more frequently a portfolio resiliency analysis to identify the properties that decrease the portfolio's overall resiliency rating while maintaining buildings' overall operational integrity.

KEY RESILIENCY SERVICES:

New Construction:

- Property hazard assessment
- Property resilience assessment (PRA): Site selection hazard screening, desktop-based vulnerability assessment of project documents, and mitigation strategy recommendation

Existing Building:

- Property hazard assessment
- Property resilience assessment (PRA): Site hazard screening, observation-based vulnerability assessment, and mitigation strategy recommendation
- Post-disaster assessment: Observation-based damage assessment, repair recommendation, and mitigation strategy recommendation
- Flood zone analysis and management: Evaluation to help prepare for/mitigate insurance issues.

Connect with a resiliency specialist.

OUTCOME

Marx Okubo provided practical solutions to reduce exposure to potential damage related to high wind events, localized flooding, and loss of power. The insights that our team contributed enabled our client to negotiate with their development partner to mitigate risks to an acceptable level for all parties.

Climate Hazard and Property Physical Resilience Assessment

Boston Metro Area, Massachusetts

CLIENT

Withheld

SERVICES

Resilience

An equity investor involved in a proposed multifamily project engaged Marx Okubo to conduct a climate hazard and property physical resilience assessment as part of the project's due diligence. The project comprised 259 residential units within three separate buildings with a total area of 320,000 square feet. As a requisite step to close on the deal, the client required that our team use the Munich RE hazard assessment tool for this project, with the assessment taking place within the client's limited due-diligence period.

Marx Okubo identified the climate hazards that presented the highest risk to the project, assessed vulnerabilities based on a technical review of the construction documents, investigated potential measures to mitigate risks, and submitted recommendations to the client and their development partner. Throughout this process, Marx Okubo provided practical solutions to reduce exposure to potential damage related to high wind events, localized flooding, and loss of power. The insights that our team contributed enabled our client to negotiate with their development partner to mitigate risks to an acceptable level for all parties.

MARX OKUBO

Warehouse Facility

Miami-Dade County, Florida

CLIENT

Withheld

SERVICES

Resilience

The client for this project, a warehouse facility located in an area subject to hurricanes, flooding, tornadoes and associated disruption to utilities, engaged Marx Okubo to conduct a preliminary site vulnerability assessment, which identified and quantified potential physical hazards and how they could affect the subject property. This assessment allowed the client to make an educated decision on whether to pursue the project and to ensure that hazards are discussed with the design team and vulnerabilities will be addressed.

Identifying risks prior to development streamlines design efficiencies and minimizes change orders during construction. Marx Okubo's evaluation allowed for a collaborative approach between architecture and engineering design professionals in order to provide the highest quality product without unnecessary costs.

MARX OKUBO

Pier 4

Boston, Massachusetts

CLIENT

Commonwealth Partners

SERVICES

Property Condition Assessment, Resilience

Marx Okubo's resiliency assessment included identifying key climate threats and assessing the property vulnerability. We made recommendations to reduce the climate hazard risk to the client's acceptable level appropriate to its unique resiliency protocols, property management relationships and capital improvement budgets.

As the property is located in an area with frequent hurricanes and also where rising sea levels threaten continuing development along the Boston Harbor, we incorporated strategies and tools to reduce the flood risk, including flood-resistant finishes, separated sub-grade vertical transportation, and implemented various methods of site detention and storm surge protection.

MARX OKUBO

Uncertainty **doesn't stand a chance.**

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.

LOCATIONS

Denver	Orange County
Seattle	Dallas
San Francisco	Atlanta
Pasadena	New York

SATELLITE OFFICES

Portland	Houston	Tampa
San Diego	Boston	Orlando
Phoenix	Washington, D.C.	Miami
Austin	Nashville	

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