

## Structural Engineering



- Construction support
- Fracture mechanics assessment and fitness-for-service
- Failure investigation
- Instrumentation and load testing (laboratory and in situ)
- Load rating
- Nonlinear finite element analysis
- Peer review
- Repair and retrofit design
- Seismic evaluation
- Specialized structural design
- Structural condition assessment
- Temporary/emergency stabilization

When the integrity or condition of a structure is in question, clients rely on WJE for answers. WJE structural engineers have solved challenging problems involving thousands of structures, ranging from small buildings to large infrastructure projects. Whether the structure is sound or substantial repairs are needed, our industry-leading experience, expertise, and creativity result in efficient use of client resources.

Successful solutions are developed from a better understanding of the problems. WJE routinely applies hands-on diagnostic studies using the latest technologies to investigate distress and deterioration and evaluate their effects on structural performance. With their in-depth understanding of the fundamental principles of structural engineering and materials behavior, our structural engineers develop creative and efficient options to accommodate each client's particular needs.





## SERVICE PROFILE

# Structural Engineering

### REPRESENTATIVE PROJECTS

- Aloha Stadium - Honolulu, HI: Structural assessment and design of repairs
- Chicago Public Schools - Chicago, IL: Structural investigation, repair design, in situ load testing, and construction observation
- Hartford Times Building - Hartford, CT: Structural retention program
- Holy Name Cathedral - Chicago, IL: Structural repairs for roof trusses and ceiling structure after millwork fell from decorative wood ceiling; fire damage investigation and repairs to heavy timber wood roof trusses
- I-35W Mississippi River Bridge - Minneapolis, MN: Structural investigation and collapse investigation
- Lakefront Trail Bicycle Trail - Chicago, IL: Construction engineering and development of complex erection procedures for curved spine structure between Chicago River and Navy Pier
- Liberty Avenue Bridge - Pittsburgh, PA: Fire damage investigation and retrofit work
- Nuclear Generating Station - AZ: Structural analysis and repair design of cooling tower
- Port of Houston - Houston, TX: Structural condition assessment of seven wharves and design of new wharf structures

