

# Structural Collapse Investigation

Structural collapse is often the furthest thing from the mind of an owner, engineer, or contractor. Yet, accidents do occur, and often with tragic consequences. When disaster strikes, it is critical to engage a forensic engineer with experience in collapse investigation. Why? Because understanding how and why a structure failed requires specialized forensic knowledge and investigation techniques; it is not the same process as design.

CTLGroup's structural and forensic engineers have been involved in the investigation of some of the most disastrous collapses of in-service structures and those under construction. We understand the importance of proper documentation and evidence preservation. We follow the Scientific Method of investigation, developing and testing hypotheses based on observation, experimentation, and analysis. Ultimately, we find answers and help our clients bring closure to unfortunate ordeals.

## **CTLGroup forensic engineers are experienced evaluating:**

- Design, material, and construction defects

- Applied loads from extreme weather, blast, or other unusual events
- Damage mechanisms including fatigue and corrosion
- Soil-structure and fluid-structure interactions
- Concrete, steel, timber, masonry, and composite materials
- Buildings, bridges, towers, stacks, tanks, vessels, temporary works, and special structures

## **Services Include:**

- Emergency response for scene documentation and evidence preservation
- Laboratory analysis of materials and structural components
- Computational modeling and simulation, including non-linear geometric and material behavior
- Data analysis, including statistical and probabilistic modeling
- Litigation support and expert testimony
- Stability analysis to identify the root cause of bridge collapses

CTLGroup has decades of experience in structural assessment, structural rehabilitation, failure investigation, seismic evaluation, and nonlinear finite element simulation of structures. We have applied this expertise to evaluation, retrofit design, and failure investigation of concrete, steel, and masonry structures including buildings, bridges, parking structures, industrial structures, environmental structures, pipelines, and foundations.

