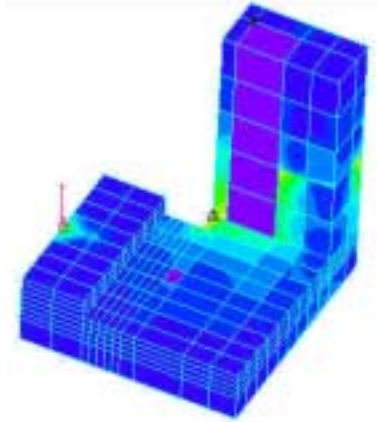


Technology Associates

Forensic Engineering Experts – Ph (800) 358-9909 - Fax (888) 358-9901

STRUCTURAL ANALYSIS

Structural failure can often produce catastrophic results. In many cases, the damage seen after the accident is not indicative of the cause of the initial failure. Fortunately, based on physical evidence, an investigator can frequently determine how and why a structure failed. The most common reasons for a failure include defective materials, defective design, improper assembly, excessive or improper loading or a combination of these. Through testing and structural analysis, it is possible to determine the root cause of the failure and propose solutions to prevent such failures from reoccurring.



Expertise

We have some 50 years of varied experience in many aspects of structural analysis including:

- Structural and mechanical properties testing
- Bending, fracture and fatigue analysis
- Finite element computer modeling
- Teaching structural dynamics at Columbia University, NYU & NASA

Questions Answered

Through scientific analysis, we can help you answer pertinent questions such as:

- Was the material defective?
- Was the structure designed properly for the intended loadings?
- Was temperature or fatigue an issue?
- Was the failed structure exposed to excessive loading?

Case Examples

SUV Roll Cage Strength:

The SUV driver was killed when the roll cage collapsed as the vehicle rolled down an embankment. Mechanical testing and finite element analyses showed that the collapse occurred due to the inferior strength of the windshield frame when compared to the rest of the vehicle's roll cage. We further showed that had the windshield frame structure been the same material and cross section as the rest of the roll cage, the driver would have survived.

Snow Load Roof Collapse:

After a period of very heavy snow, a flat-roofed building suffered collapse of a portion of its roof. We demonstrated that the steel joists produced by our client were not defectively welded by showing that the welds that failed were sufficient to carry the design load of the roof. Thus, we proved that the cause of the accident was the combination of snow and rain, creating a load nearly twice the roof's design load.