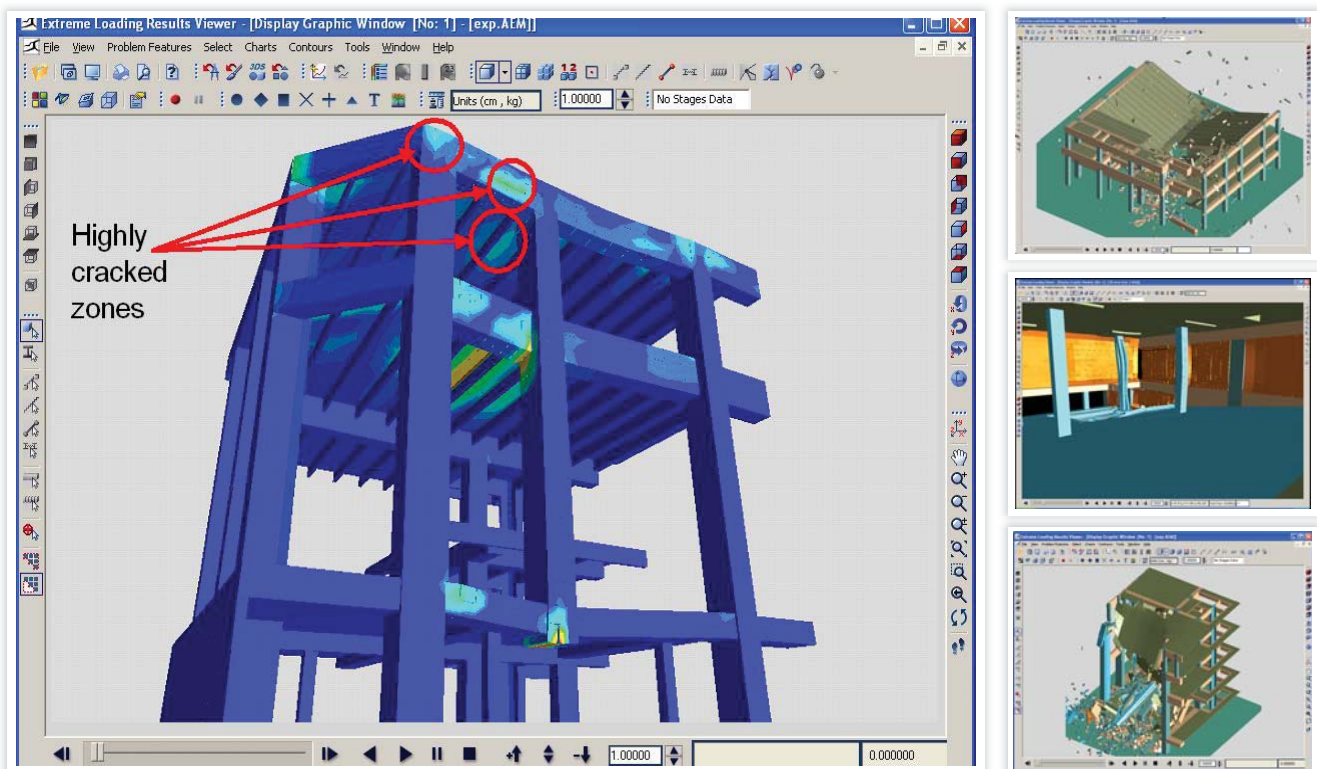


Fairwinds Tower will be 48 stories, 800 feet tall, and have 1.5 million square feet of space and its price tag will be about \$880 million when it gets completed. The building consists of a high-rise tower and a podium. It was announced that it would become the official headquarters building for an international bank upon its completion in 2009.

In the light of post 9-11 building code requirements, the overall vulnerability of the structure has to be assessed to determine its safety relevant to both man-made and natural hazards. Security Management Consultants reviewed the possible threat scenarios to the structure and determined that there is a risk of an explosives-laden vehicle.



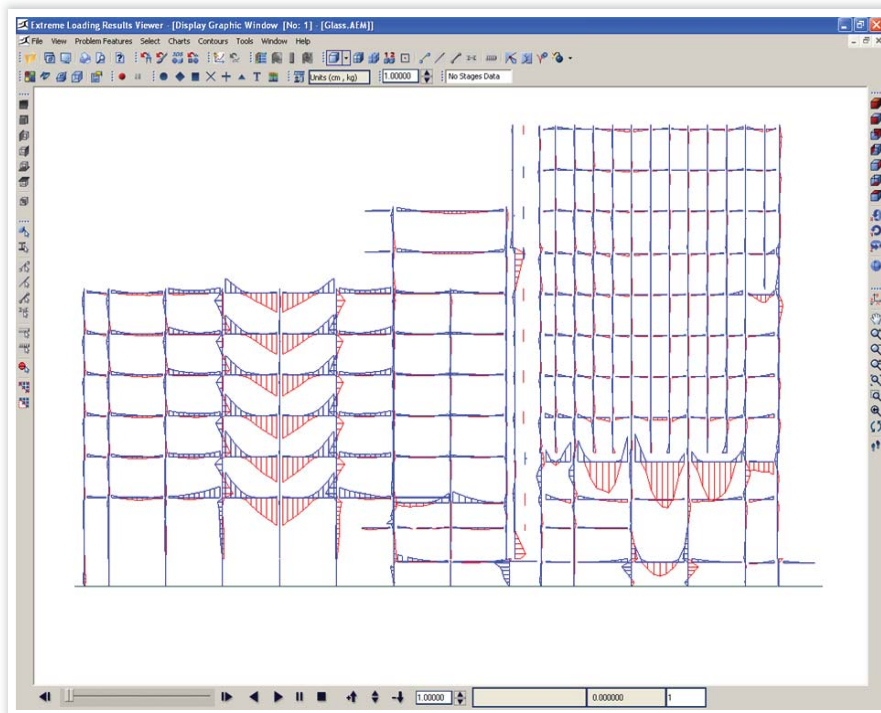
Results of the Analysis

Applied Science International (ASI) was tasked with assessing the structure's vulnerability in several scenarios with different positions for the blast inside and outside the building with different weights for the explosive charge, taking into consideration vertical loads inherent in the structure.

* This code name is used for this project for security reasons. For more details about this or any of other ASI projects, please contact ASI at cairo@appliedscienceint.com

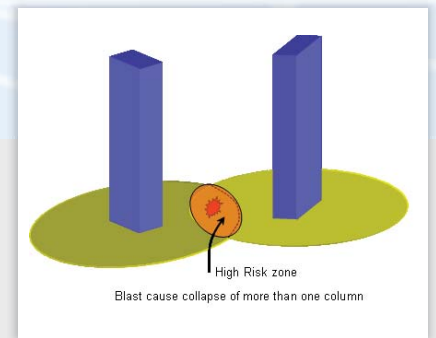
ASI was able to

- Identify risk zones for each column in the structure
- Determine the effect of blast on masonry walls and concrete slabs of the security control rooms
- Determine the probability of progressive collapse for different scenarios
- Determine the effect of impact of a projectile on the glass facade

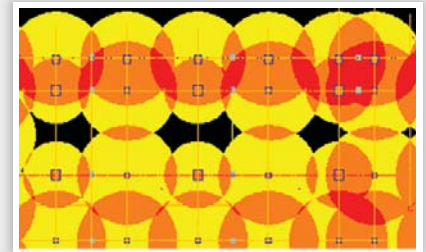


Bending Moment Diagram after Column Failure

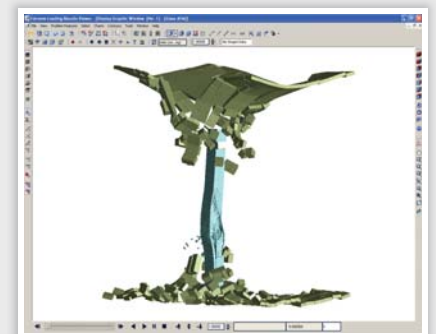
ASI provided recommendations to reduce or eliminate high and extreme risk zones by performing changes in the structural design, structural materials, column spacing, and limiting access to some extreme-risk areas of the structure.



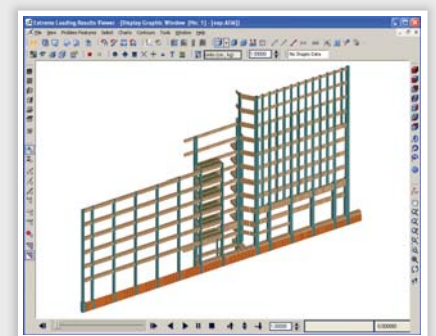
Identifying High Risk Zones



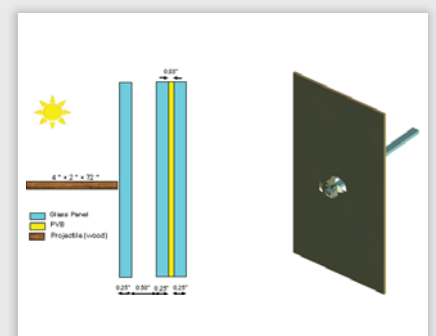
Risk Zone Distribution



Column Failure Model



Model of the Exterior Frame



Glass Analysis

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