Residual Capacity Evaluation and Visualization of Damaged Structure

Dual Degree Engineering Dept.

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DESIGN

Research Objectives

Support CEWES in the study of the prediction of degree of degradation and residual life capacity of structures which have been damaged either by catastrophic events such as explosions or fire or repeated (episodic and / or continuous) events such as earthquakes, tidal action, and wind gusts among others. This effort will support the integration of existing analyses methods, with enhanced data exchange, high performance computing and advanced visualization methods

STATEMENT of WORK

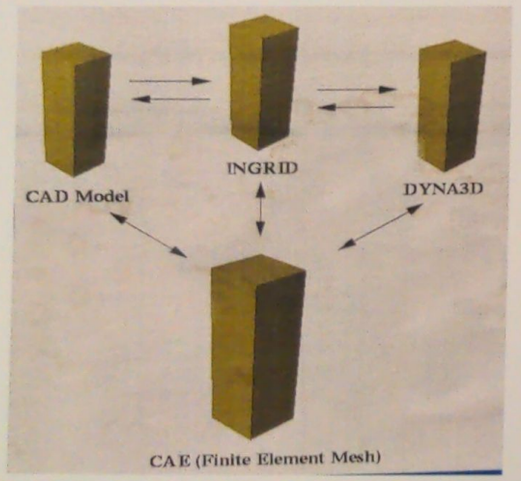
- Literature Survey & Evaluation of Various Damage Rules
- Modeling and simulation of a Structure under Blast Loading in CHSSI Software
- Modeling and simulation of Damaged Structure due Static / Dynamic loading
- Visualization of damage rules using existing MSRC/SV software

ACCOMPLISHMENTS

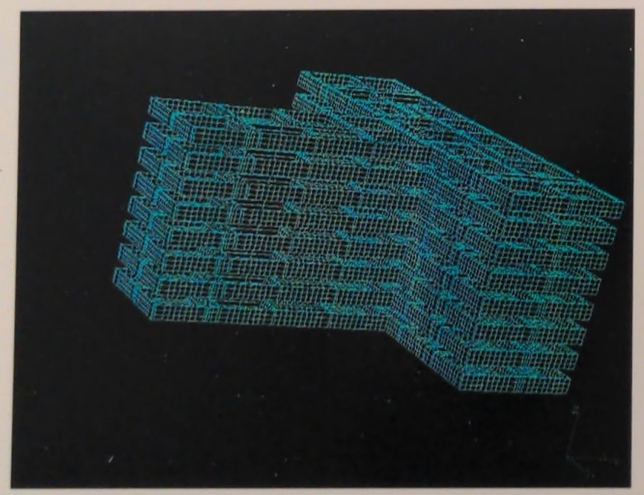
- Preliminary Lit. Survey complete
- CAD Model completed
- INGRID model generated
- DYNA3D deck conversion ongoing
- Sample FEM data displayed in VR
- Public Domain Blast models

RESULTS

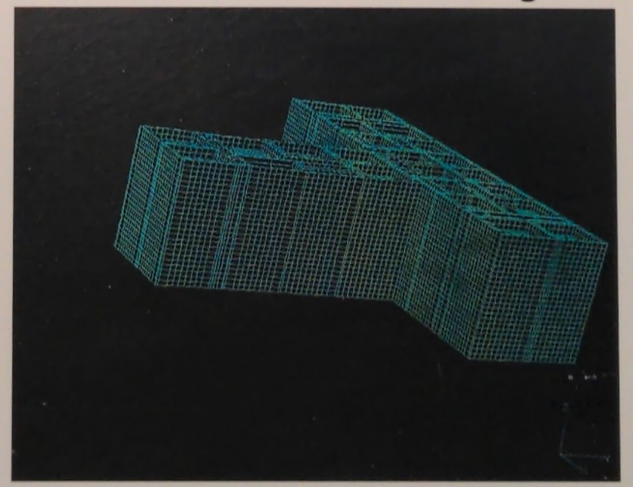
Data Exchange Model



INGRID Model of Floors (T Building)



INGRID Model of T Building



CAD Model of T Building