

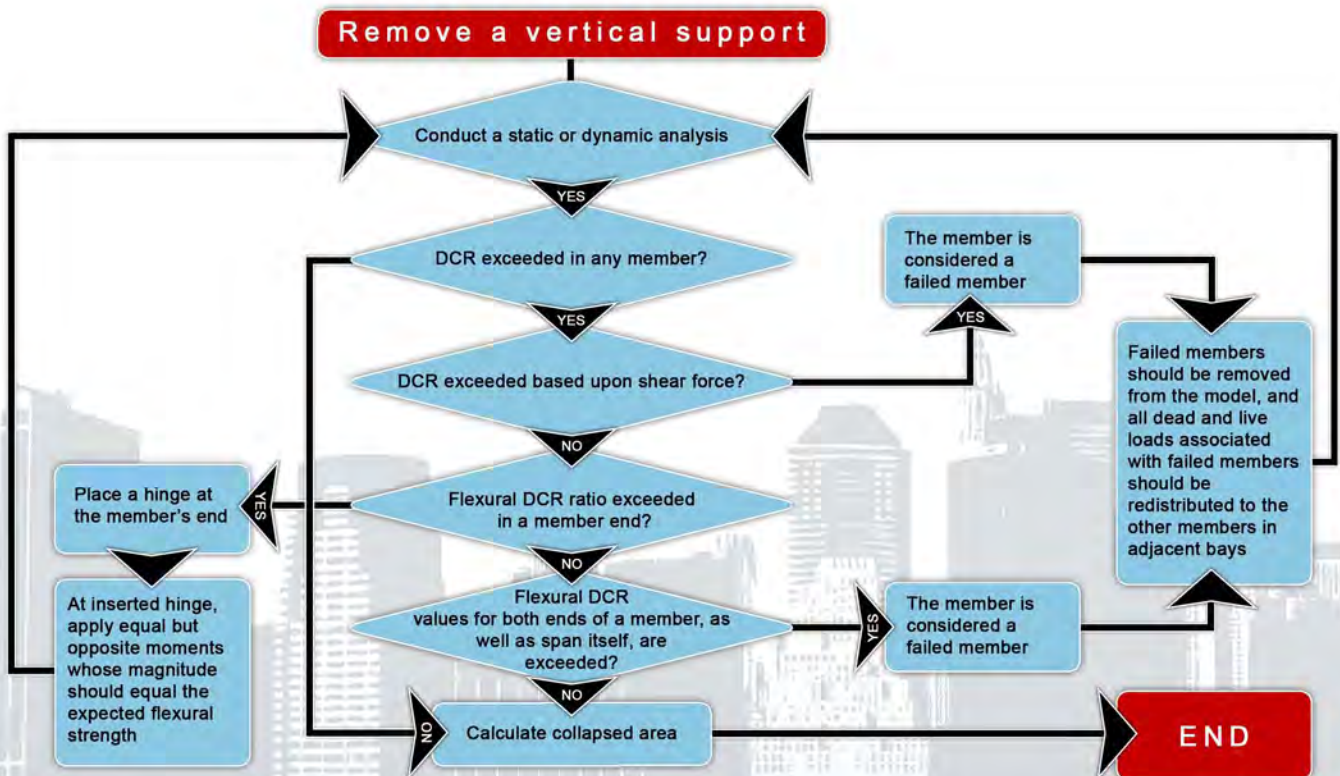
PROGRESSIVE COLLAPSE

Advantages of Using Extreme Loading[®] for Structures Software for Progressive Collapse Analysis:

- More accurate analysis:
 - o Plastic hinges are not assumed; instead, they are automatically calculated and generated without any user intervention.
 - o Collapse areas are not assumed. When a plastic hinge fails, the solver automatically separates the section that fails, allowing it to behave naturally within the collapse scenario.
- Quick & easy modeling:
 - o Automatic mesh adjustments
 - o Automatic spring generation
 - o Data exchange available with several FEM and BIM software

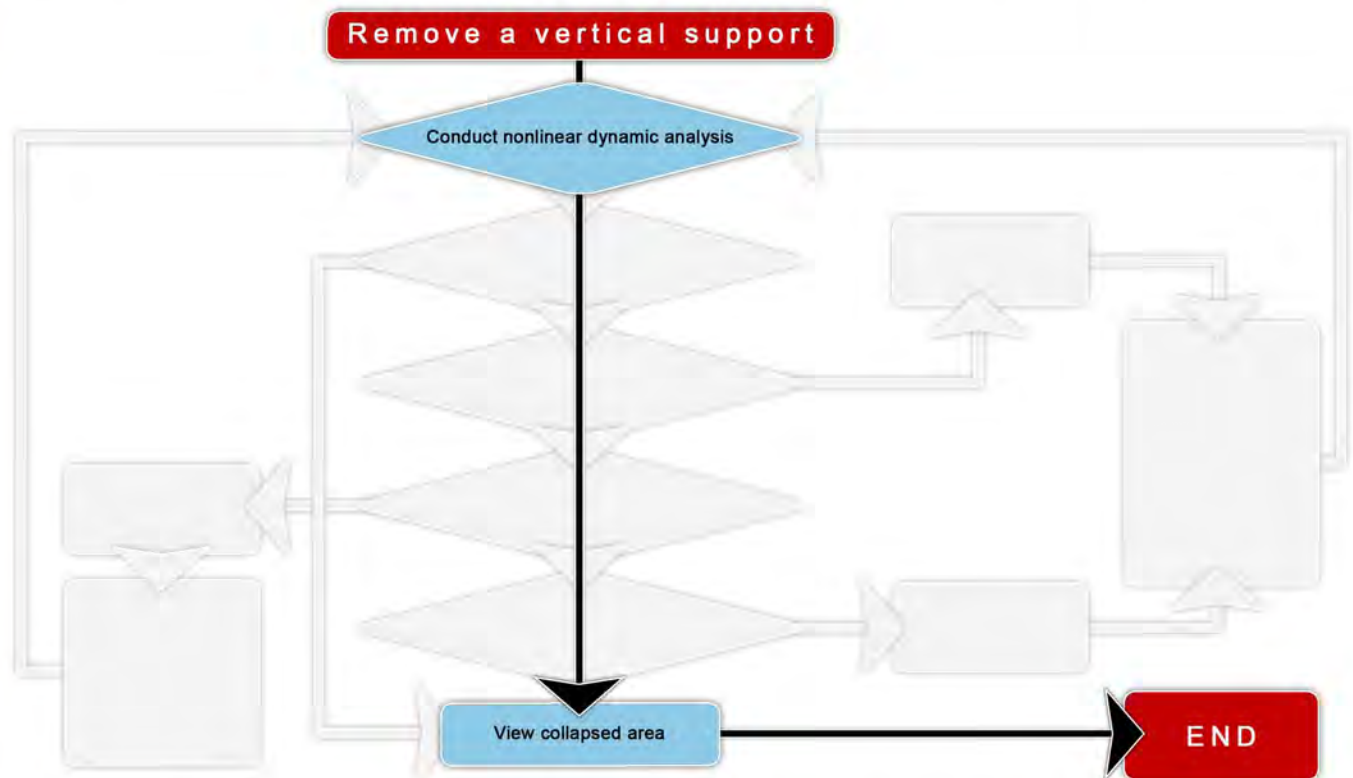
FEM – AEM Comparison:

Progressive Collapse Analysis using simplified FEM: Typical Linear Static/Dynamic Analysis for progressive collapse using simplified FEM software (shell and frame elements).



PROGRESSIVE COLLAPSE

Progressive Collapse Analysis using Extreme Loading[®] for Structures: Typical Nonlinear Dynamic Analysis for progressive collapse using Applied Element Method (AEM) using 3D solid elements.



Extreme Loading[®] for Structures Features for Progressive Collapse Analysis:

- Structural components can be removed either simultaneously or at custom intervals.
- The progressive collapse analysis is performed automatically within the solver. Gravity is provided by default with non-linear dynamic analysis to simulate the accumulated effects of progressive collapse without any user intervention.
- Through the true modeling of structural components, "catenary action" and other structural responses are taken into account.
- Users can truly understand the how and why of a structure's collapse because ELS allows them to witness the entire duration of the collapse process, verify which part(s) of the structure will suffer collapse, and predict the effects of falling debris on adjacent structures.

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