

CEEn-2019CPST-001

Vector Suspended Scoreboard Seismic Analysis

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Introduction

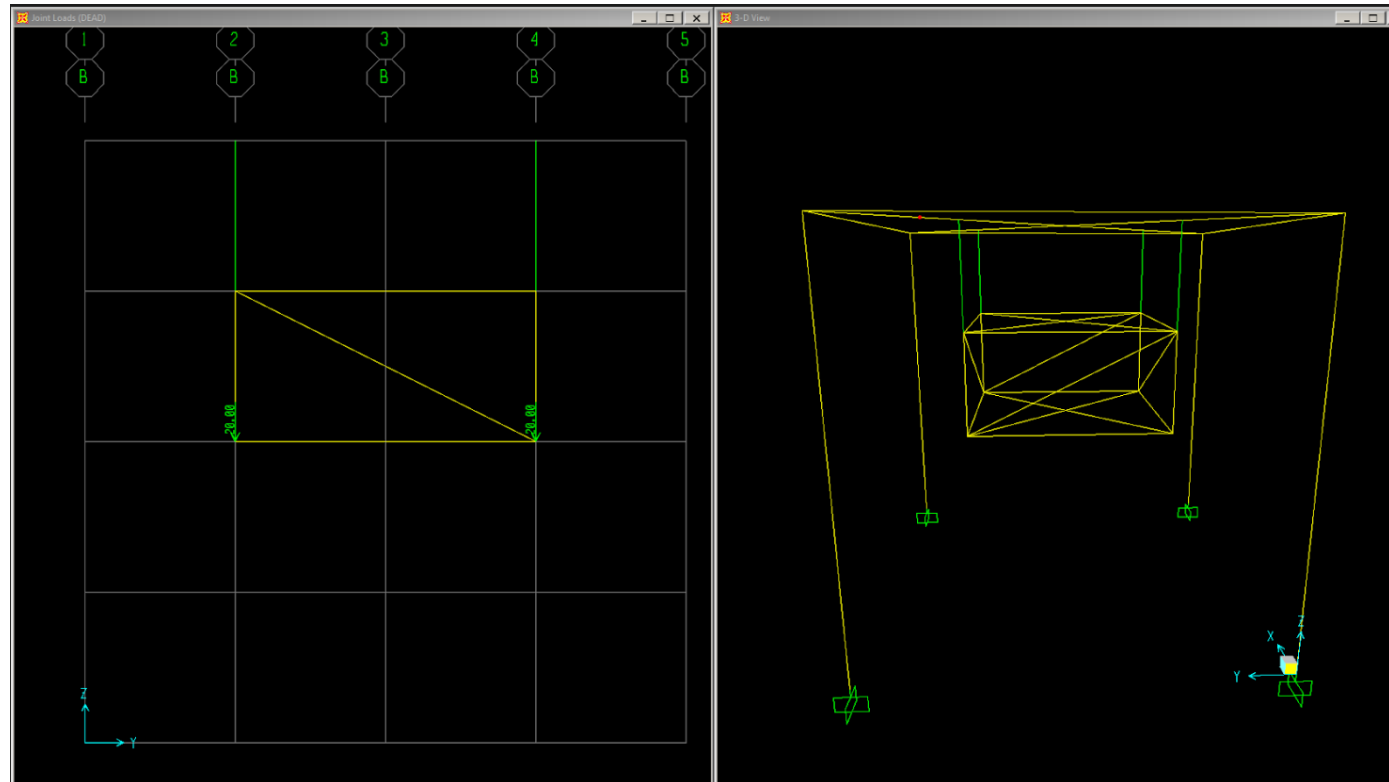
- **Suspended Scoreboard Seismic Analysis Project: Goal was to develop a model and/or system of equations to accurately predict the displacement of a jumbotron during a seismic event.**
- **SAP2000 was the main tool used**
- **Challenges/Obstacles: unfamiliarity with SAP2000, closing of BYU campus**
- **Results include a close, but still incomplete, model**

Project Tasks and Deliverables

- Research to determine most accurate and efficient way to model a suspended scoreboard
- SAP2000 was chosen
- Tutorials, research, trial and error to learn how to use SAP2000 correctly
- Hanging Jumbotron was modeled using SAP2000
- Output tables are available. However, desired accuracy was never achieved.

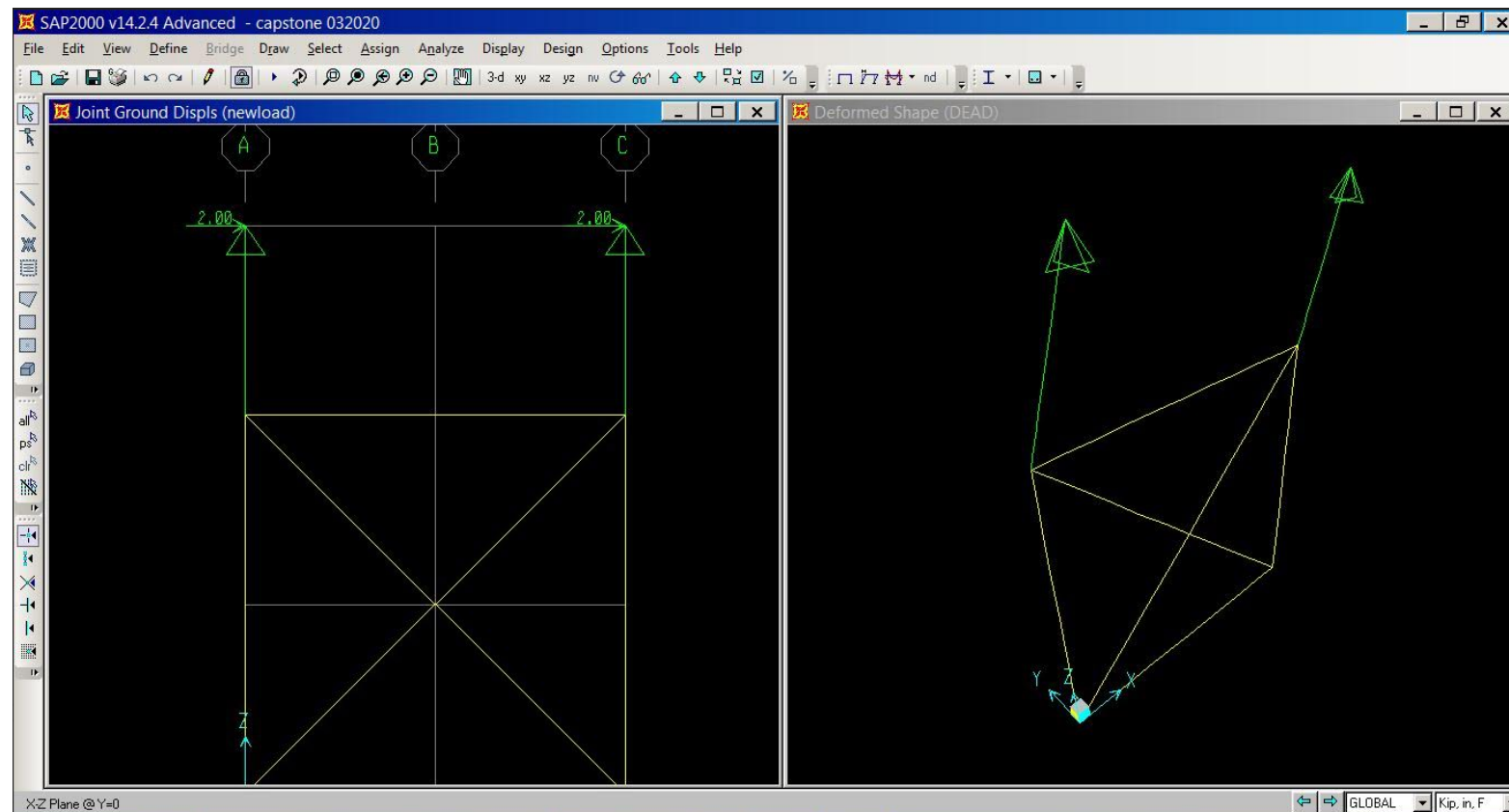
Design and Analysis

- Original Plan was to build a 3D model of Suspended Scoreboard – too many variables and complications
- Working model was produced. However, outputs not totally accurate.



Design and Analysis Cont'd

- It was decided that a 2D model would still be reasonably accurate, yet simpler to build and manipulate



Discussion of Results

- Displacement outputs were produced from the SAP2000 models and recorded. However, they are not included because the desired accuracy was not achieved.
- The most accurate SAP2000 file is available for further analysis
- Unfamiliarity with SAP2000, along with COVID-19, significantly slowed progress of the project

Conclusions

- **The goal of a more accurate method to predict the displacement of a suspended scoreboard in a seismic event was not achieved.**
- **SAP2000 is adequate to give these predictions**
- **An individual very familiar with SAP2000 would mostly likely be able to make the final adjustments and produce the desired results**

Recommendations

- The current version of the SAP2000 model could be “corrected” by an individual familiar with SAP2000 to produce the desired results

The End

Any Questions?