

Team Members



William Bryan



Giacomo LaLicata



Ryan Morris



Owen Neylon



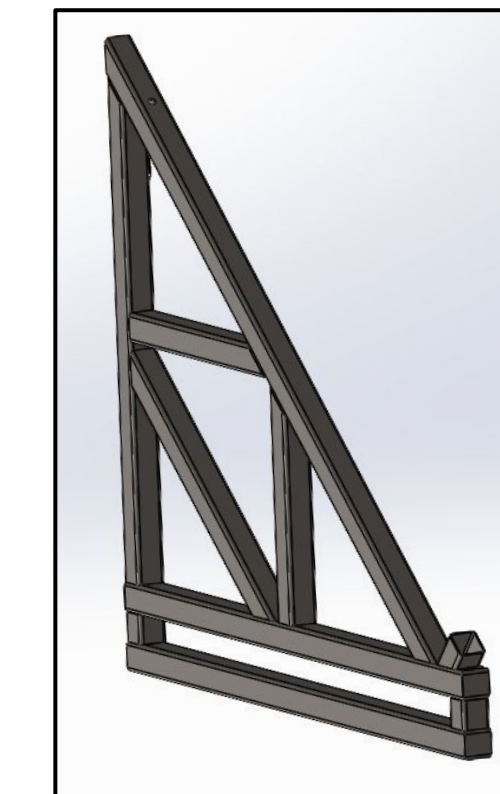
Tanner Renken

Project Overview

Solar Turbines requires a more efficient method to transport their large gas turbine roof panels. The current method exceeds standard road transport width limits, requiring wide-load permits, increased cost, and added delays during shipping. To address this, the team developed a reusable, welded steel fixture that supports and secures the roof panel while fitting within standard road transport dimensional limits. The design improves transport practicality, handling safety, and panel protection while providing a durable reusable packaging solution for industrial use.

Manufacturing Validation

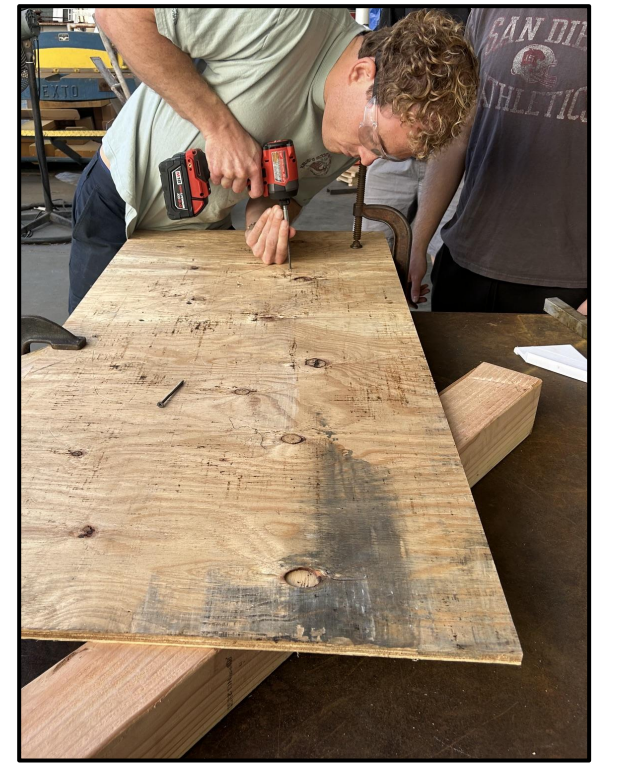
Full-Scale Truss Section



Raw Material



Jig Manufacturing



Final Assembly of Jig for Angled Cuts



Angled Cut



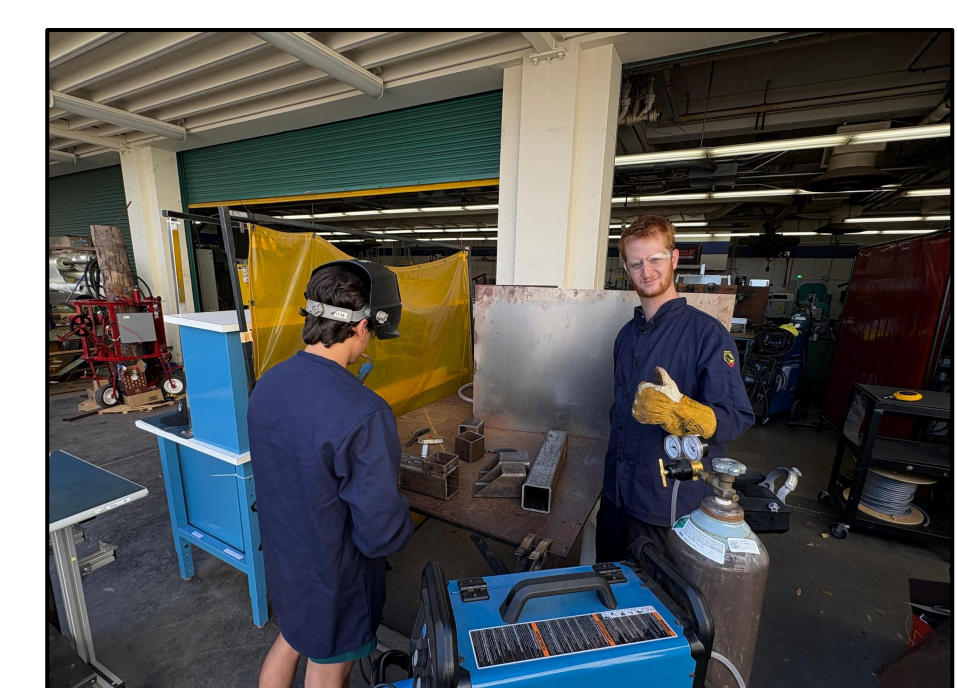
Straight Cut



Welding



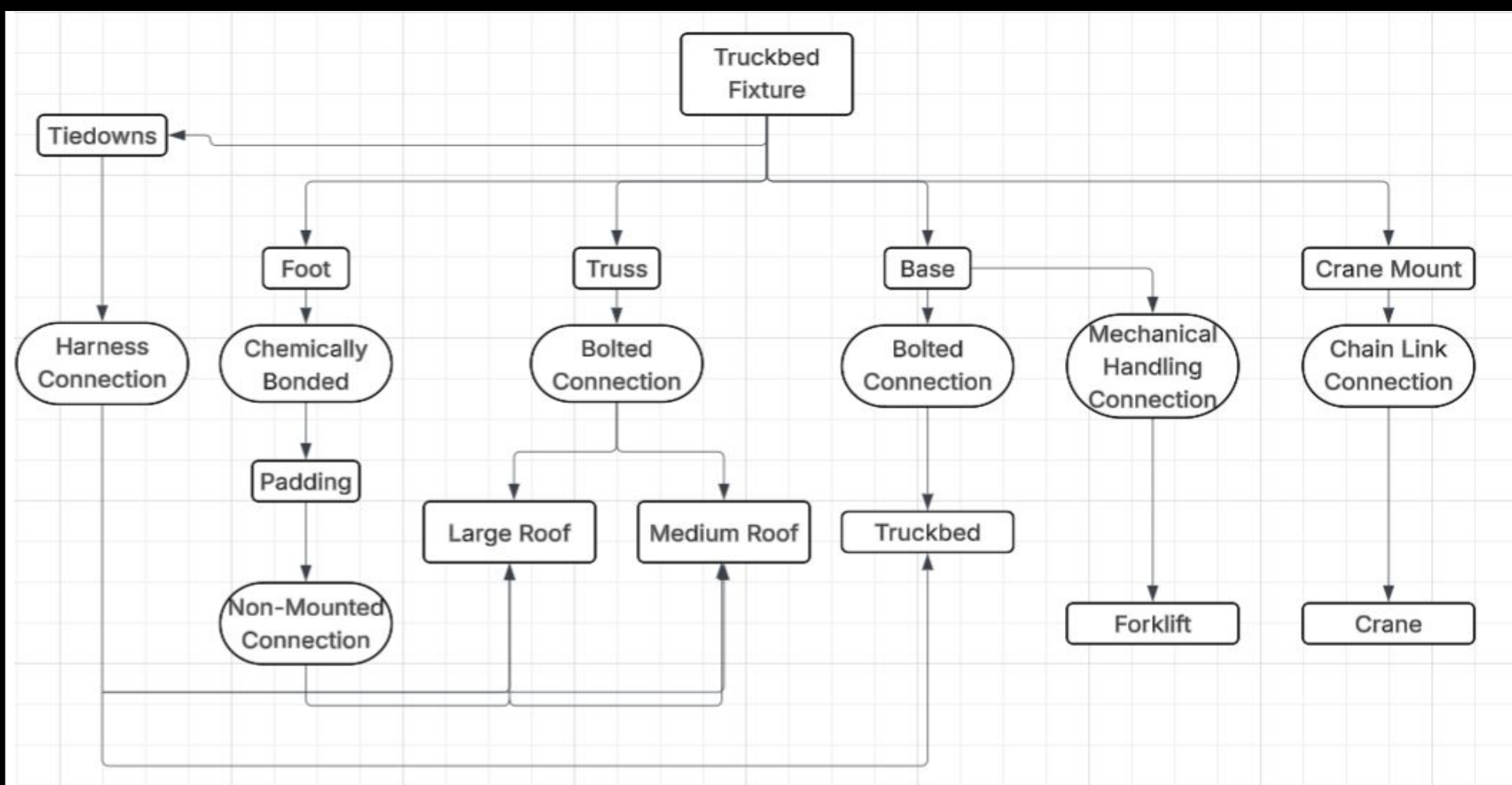
Welding Practice



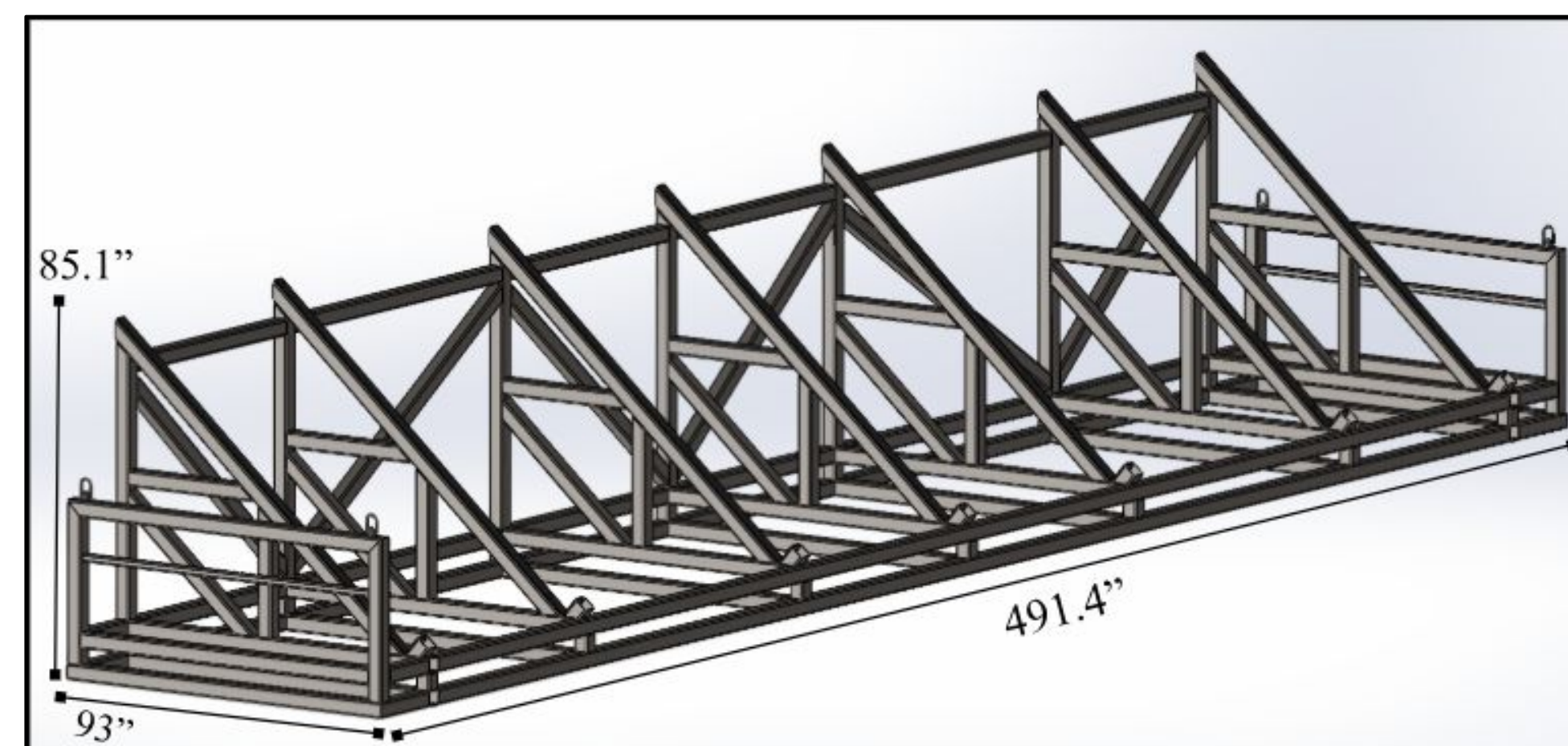
Assembled Part



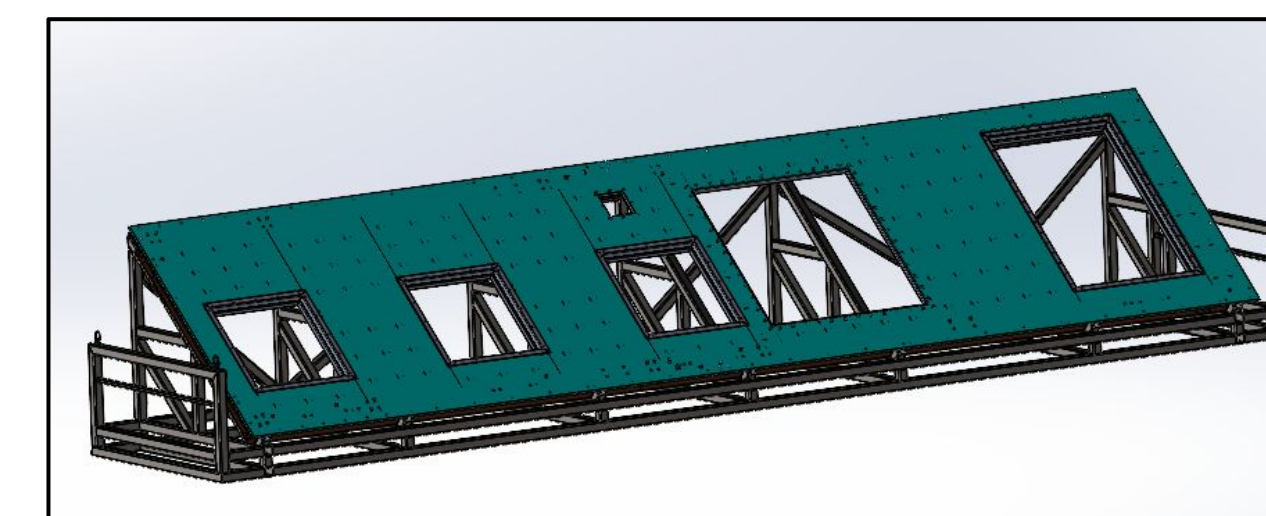
System Level Diagram



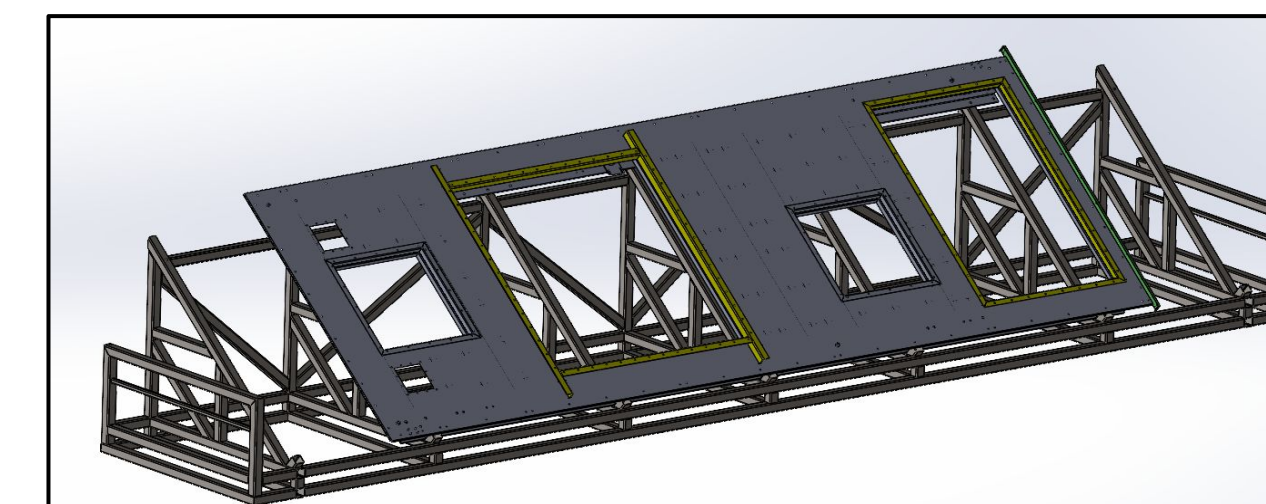
Full Assembly CAD



Full Fixture Assembly



Fixture with Large Roof Panel

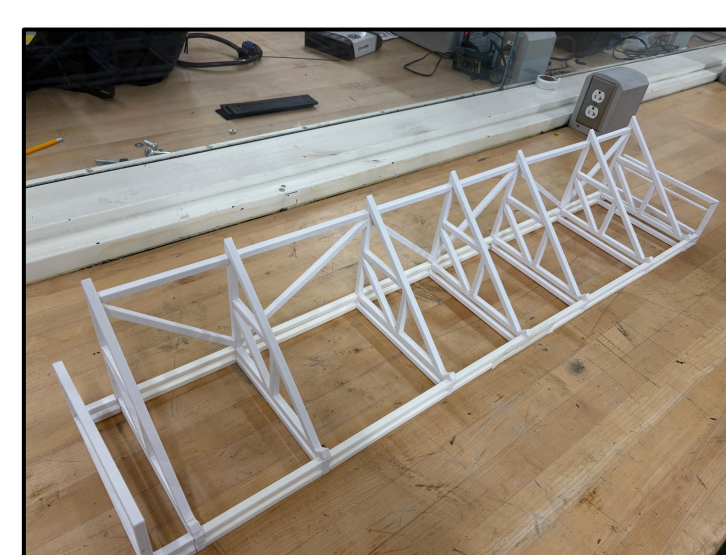


Fixture with Medium Roof Panel

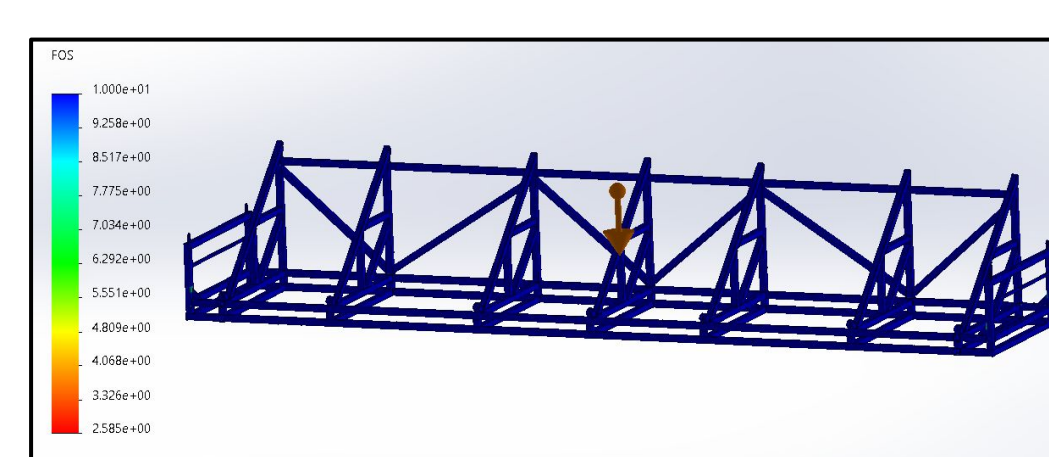
Prototype & Testing



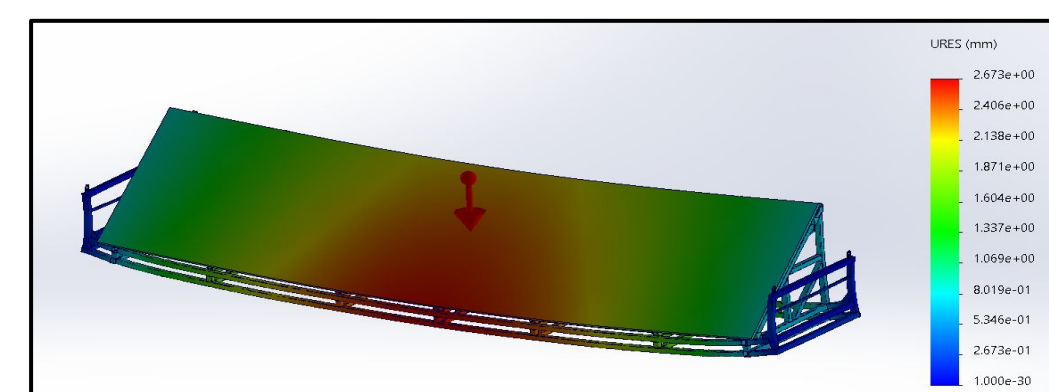
From Splicer to Assembled Prototype



1:12 3d Printed Model

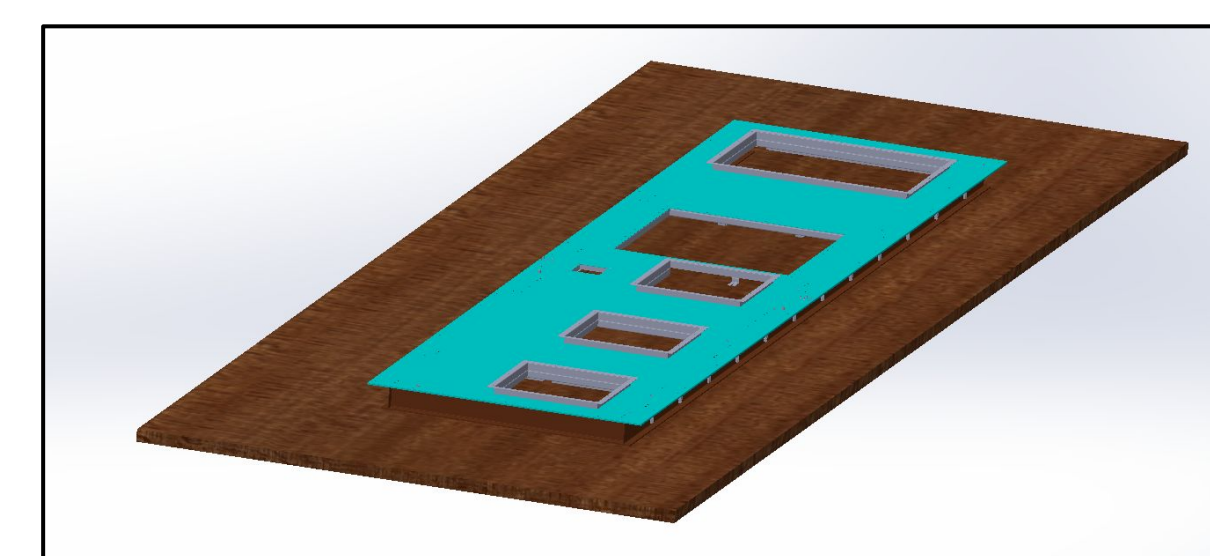


FEA Factor of Safety Analysis

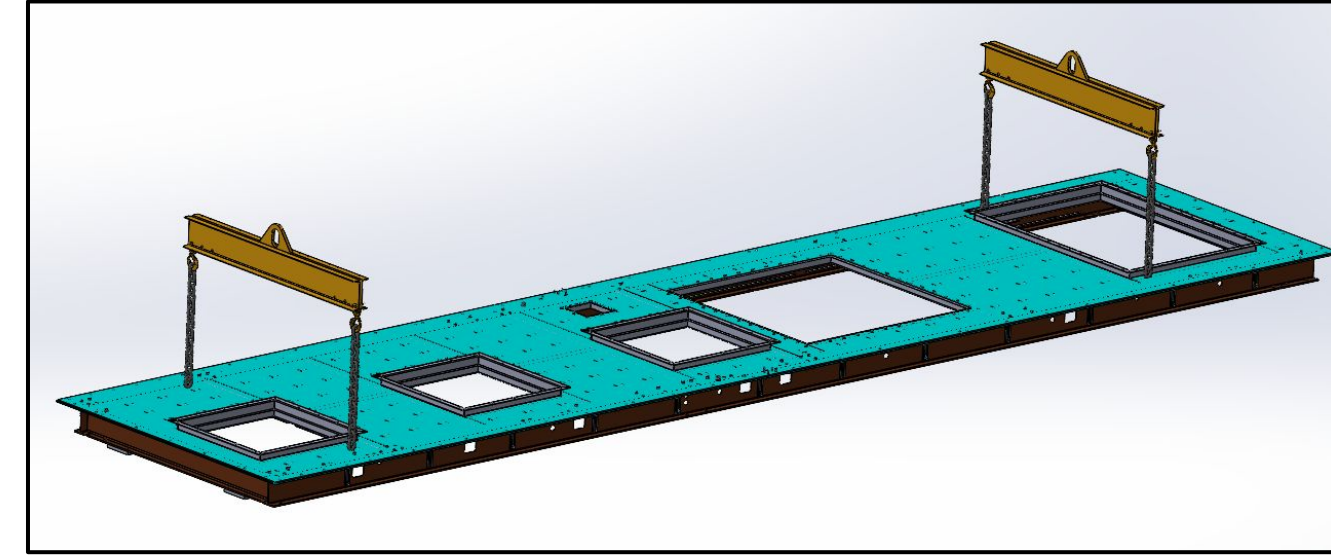


FEA Displacement Analysis

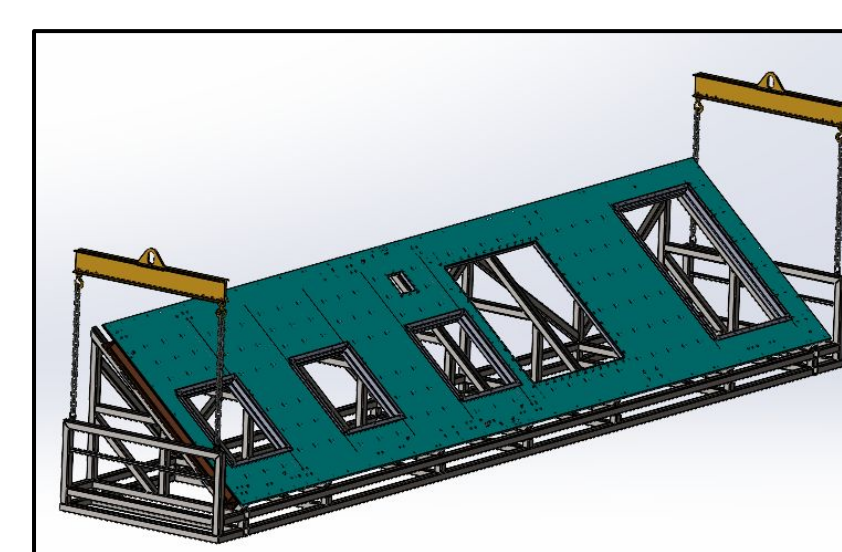
System Integration



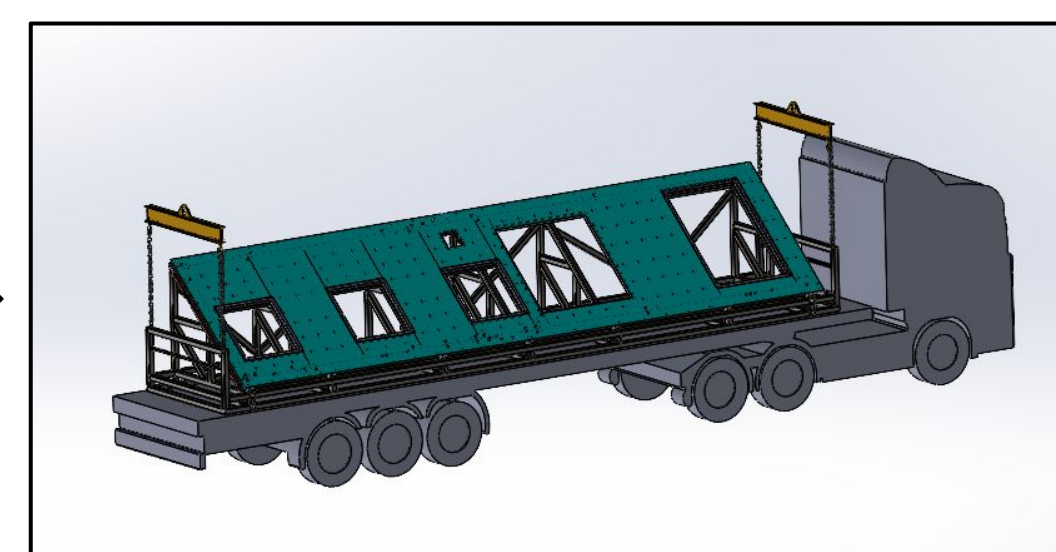
Roof Panel Staged Flat for Loading



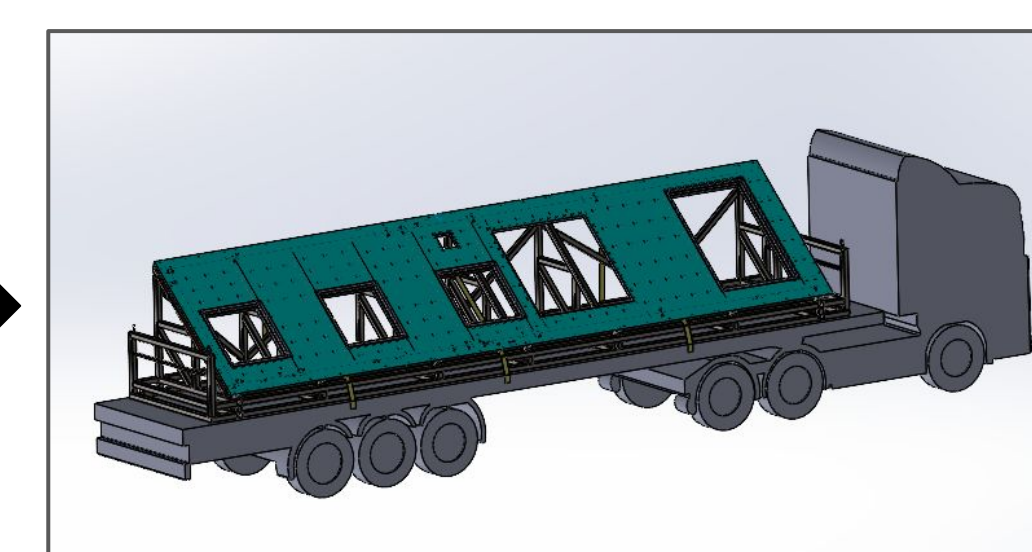
Crane Lift Points Attached to Roof Panel



Roof Panel Lowered onto Transport Fixture



Fixture and Roof Panel Loaded onto Truck



Rigging Removed and Tie-Downs Secured

Acknowledgements

The team would like to thank Dr. Shaffar for his guidance throughout the year. We would also like to thank Tu Nguyen for his guidance and input while manufacturing. Finally, team would like to thank Antonio Jimenez and Solar Turbines for their sponsorship of our project.