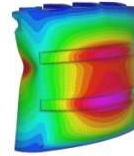


Date: August 2025
Client: Elten Logistic Systems Netherlands



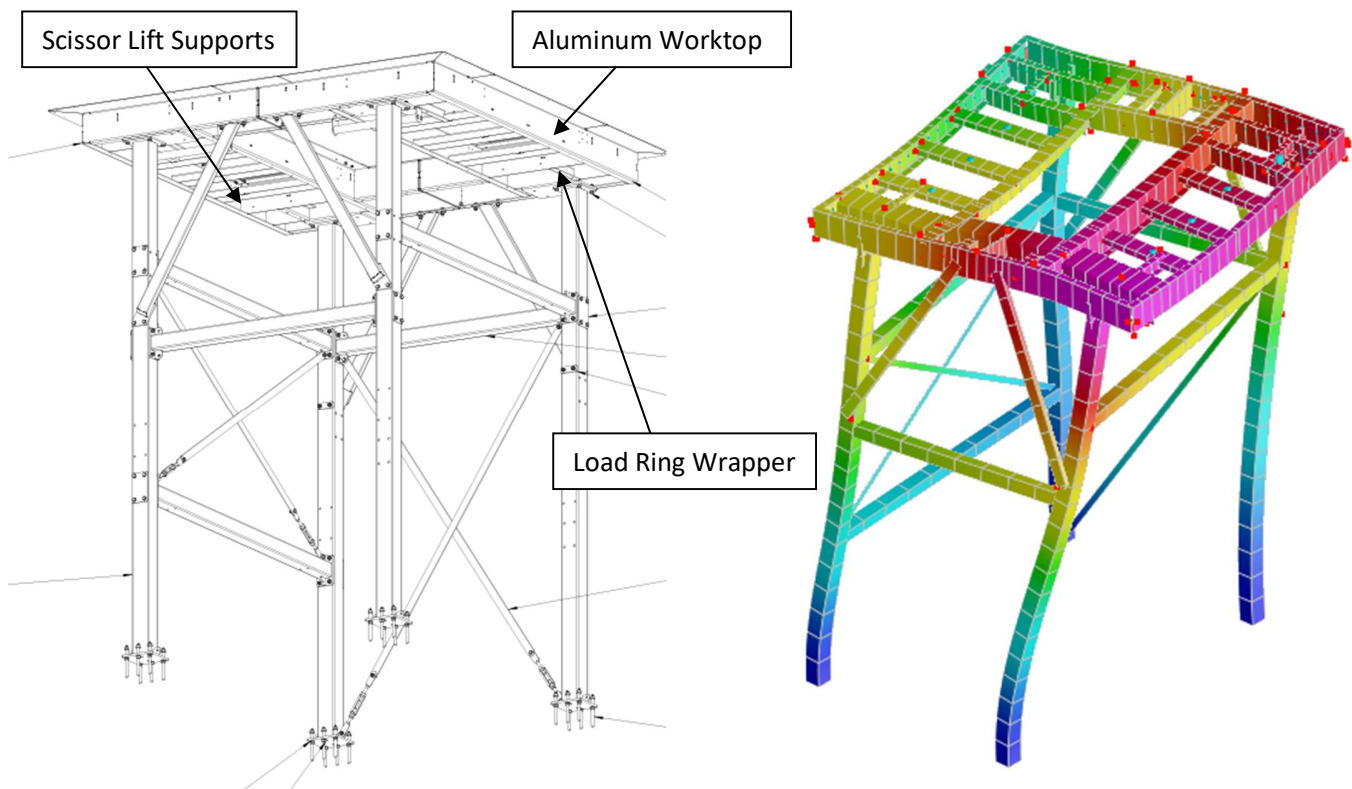
David Beneke Consulting
Finite Element Analysis for Engineering

MEZZANINE STRUCTURE FOR AN ELEVATED PALLETISER

Project Description:

David Beneke Consulting was commissioned by Elten Logistic Systems Netherlands to undertake 3rd party proof checking of a mezzanine support structure that supports an elevated palletiser for a project located in Tarneit, Victoria. The structure is fabricated using hot-rolled steel thus requiring adherence to the AS4100-2020 Australian Steel Structures Standard.

The finite element analysis (FEA) model of the palletiser support structure used 1 dimensional line elements to represent beams, columns, and braces, with extra weight from the fencing added as nodal masses. Key live loads are represented as concentrated point loads at specific spots—covering the scissor lift supports, aluminum worktop, and load ring wrapper. After checking member capacities and connections for static loads (including that of AS1657), the FEA model was subjected to lateral accelerations under seismic conditions with similar member and connection checks undertaken.



The mezzanine support structure (left) and the 1st mode of vibration associated with our FEA model

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