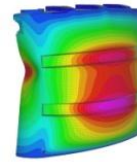


Date: May 2024
Client: Bito Legertechnik - Germany



David Beneke Consulting

Finite Element Analysis for Engineering

FINITE ELEMENT ANALYSIS OF A STAIR TOWER

David Beneke Consulting Germany, was commissioned by Bito-Lagertechnik, a provider of warehouse storage and intralogistics systems, to undertake a Finite Element Analysis (FEA) of a stair tower within the Woolworths Moorebank Regional Distribution Centre (MoRDC), an automated warehouse facility in Sydney.

The stair tower was modelled in Strand7 using non-linear geometric analysis with linear elastic material properties. Dead, live and seismic loads were applied in accordance with **AS/NZS 1170.0:2002 (Loading Code)**, **AS 1657:2018 (Stairs and Handrails)**, and **AS 1170.4:2024 (Earthquake)**.

Columns and platform beams were modelled as 1D line elements, with spine bracing represented using tension-only elements. Platform grating was modelled as load patches to distribute live loads.

The members and connections were subsequently checked for compliance with **AS 4100:2020 (Steel Structures Code)**.

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