ACE ENGINEERING GROUP

Anthony Nguyen



Director and Principal Engineer

MIEAust · CPEng · NER · RPEQ

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Professional profile

Principal engineer with experience in independent machine assessment, OEM design and engineering support for operating mining and port assets. Leads ACE's engineering work on stackers, reclaimers, shiploaders, ship-unloaders, conveyors and associated structures.

Connects structural analysis with machine balance, mechanical interfaces, fabrication, operation and maintenance. Provides calculations, assessed options and recommendations for design development, modifications and repair.

Specialist capabilities

- **Machine analysis and design.** Finite element analysis, structural load paths, fatigue, dynamics and assessment of new machines and upgrades.
- **Independent assessment and review.** Structural audits and review of another party's models and calculations, with documented findings and actions.
- **Whole machine assessment.** Balance, stability, wheel and support loads, luffing systems and the effects of changes in mass, duty and configuration.
- **Investigation and repair.** Inspection, failure investigation, strengthening, remediation and engineering for jacking, temporary supports and major maintenance.

ACE Engineering Group

Director and Principal Engineer

December 2024 to present

Selected work for ACE Engineering Group

Linear stacker during design development

Supported the equipment manufacturer and project delivery team with structural and mechanical calculations, whole machine assessments and an AS 4324.1:2025 gap study. Assessed stability, wheel reactions, luff cylinder forces, long travel requirements and buffer loads.

Provided recommendations and an action register for the OEM's detailed design, including design basis clarifications, technical specification changes and interface actions. Outstanding design and verification items were identified for the next project stages.

Corroded bucketwheel assessment

Anthony Nguyen carried out the bucketwheel structural assessment for Beta International Associates (BIA), the lead engineering firm.

The work considered the recorded condition of the bucketwheel, available thickness measurements and assessed loading. It addressed structural capacity, fatigue concerns and local repair requirements, providing engineering recommendations for BIA's client advice.

Read BIA's published project summary

Professional experience

Civmec

May 2024 to August 2026

Principal Structural Engineer (Contract)

Led structural engineering for new and replacement bulk handling machines, from tender development through design and detailed verification. Reviewed models, calculations and drawings, coordinated structural and mechanical interfaces, and resolved design issues with project and drafting teams.

Selected work: Port Waratah Coal Services shiploader replacement (SL7.11); Alcoa bridge reclaimer (BWR110); Rio Tinto West Angelas and Brockman 4 reclaimer replacement tender.

TAKRAF Group

October 2021 to May 2024

Lead Structural Engineer

Led structural engineering within an OEM across feasibility studies, early contractor involvement, preliminary design and operating asset support. Assessed machine balance, fatigue, load paths and proposed capacity upgrades, and developed repair and strengthening recommendations.

Selected work: Structural assessment of the Koolan Island shiploader; Port Outflow Debottlenecking identification phase study for SL4, BWR7 and BWR8 at Port Hedland; shiploader upgrade studies at Nelson Point (PDP2); early contractor involvement for new reclaimers at Parker Point (RC4P to RC6P); capacity upgrades for the Mount Pleasant stackers.

Engenium

May 2019 to October 2021

Senior Structural Engineer

Delivered structural engineering for operating mining, processing and port assets. Combined inspection findings, failure investigation and finite element analysis with repair and strengthening design, accounting for access, constructability and production constraints.

Selected work: Failure analysis, finite element analysis and strengthening design for Christmas Creek Train Load Out; condition assessment and cyclone damage remediation at Burrup Desalination Plant.

ASPEC Engineering

January 2012 to May 2019

Structural Engineer

Undertook independent structural assessments, audits and integrity investigations for bulk handling machinery. Work included AS 4324.1 assessments, nonlinear finite element analysis, fatigue and dynamic assessment, and engineering for temporary support conditions during shutdowns.

Selected work: Structural audits and integrity assessments for Rio Tinto operations, fatigue assessment and repair strategy for BHP Spence in Chile, and jacking and slew bearing replacement assessments.

Education and professional credentials

Bachelor of Engineering (Civil), First Class Honours

The University of Western Australia · 2010

Member of Engineers Australia · Chartered Professional Engineer
National Engineering Register · Registered Professional Engineer of Queensland