

OVERVIEW

At MMH Engineering our mission is to provide engineering design solutions and valued consultancy advice to industry leaders and venture partners. We are dedicated to providing client satisfaction by ensuring the highest quality and timeliness of deliverables to successfully achieve project goals.

SERVICES

MMH Engineering provides a range of engineering and consultancy services specifically tailored for bulk materials handling equipment such as;

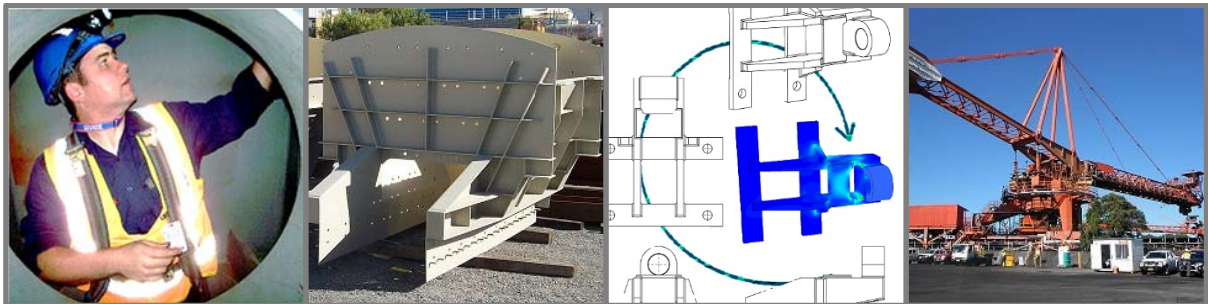
- Bucket Wheel Reclaimers
- Bridge Reclaimers
- Portal Scraper Reclaimers
- Ship Loaders
- Ship Unloaders
- Wharf Cranes
- Stackers
- Trippers
- Gantry Cranes
- Excavator
- Straddle Carriers
- Gantry Cranes

Design

- Maintenance Improvement
- Throughput Upgrade
- Refurbishment
- Damage Repairs
- Audit of Design Calculations
- Re-assessment of existing structures

Site Inspection

- Inspection and Auditing of Structures and Equipment
- Condition Monitoring and Instrumentation of Steel Structures
- Accidental Damage and Deterioration Assessment
- Failure Investigation

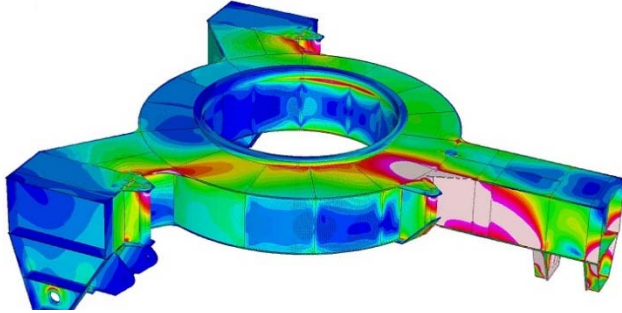
**Assessment and Analysis**

- Advanced Structural Analysis
- Finite Element Modelling
- Operational Verification
- Remnant Life Assessment and Life Extension Studies
- Risk Assessment
- Assessment and Optimisation of;
 - Efficiency
 - Utilisation
 - Availability

CONTACT DETAILS

STRUCTURAL DESIGN

Fabrication of steelwork for modification of bulk material handling equipment can often be a complex task requiring consideration of strength, stability and often buckling and fatigue. This is particularly important where the modifications affect the primary structural steelwork of the equipment. Bulk materials handling equipment is subjected to quite variable and dynamic loads leading to robust, but often fatigue sensitive structures. Modification of these structures, without due care and consideration, could lead to a reduction of useful service life or equipment failure.



Examples of typical steelwork modifications;

- Alterations to suit new or upgraded mechanical or electrical equipment
- Enhancements to improve maintainability, reliability or efficiency
- Platform and stairway alterations to improve personnel access and safety

SHUTDOWN ENGINEERING SUPPORT

When equipment is shut down for routine maintenance, complex upgrades or refurbishments it is critical to return the equipment to service as quickly as possible. By providing engineering support to shutdowns MMH Engineering gives its clients the best opportunity to meet or exceed the shutdown deadline by using effective methodologies and engineered safe work procedures.

A range of shutdown works requiring or greatly benefitting from engineering support include;

- Replacement of Critical Components; i.e. Slew Bearings, Bucket Wheels, Luff Cylinders, Bogies, Winches, Ropes and Stays, Gearboxes Drives and Shafts
- Controlled staged de-construction
- Refurbishment of corroded or damaged sections
- Upgrade of components or systems
- Installation of revised control and monitoring systems

**CONTACT DETAILS**

FAILURE ASSESSMENT AND DAMAGE RECTIFICATION

Mobile equipment is often operated in demanding environments which sometimes leads to damage to primary and secondary structures due to accidental damage from overloading or improper use, operational wear, deterioration due to corrosion and from a number of other causes.

It is important that the cause of the damage is investigated and determined to help ensure that such incidents will not reoccur and also to ensure that the machine has not been subjected to further, less obvious or non visual damage.

MMH Engineering can ensure that the damage is repaired in a safe manner which will not adversely affect the structural integrity or the life of the machine or its components.

**ENGINEERING AUDITS AND MONITORING**

Routine visual inspections and PLC checks often uncover reoccurring failures or unresolved issues which are identified and rectified but often are not assessed for determining if a viable alternative solution or a broader reaching problem exists.



An engineering audit aims to create (i.e. via equipment monitoring), collect, and review information from the machine from a wide variety of sources, including; visual inspections, instrumentation results, PLC audits, incident reports, and operational data. This information is used to evaluate the machine to determine if any systemic issues are present which are not readily apparent.

While the focus of these audits is on personnel safety and structural integrity, this approach often leads to other tangible and beneficial results such as increases in productivity or efficiency.

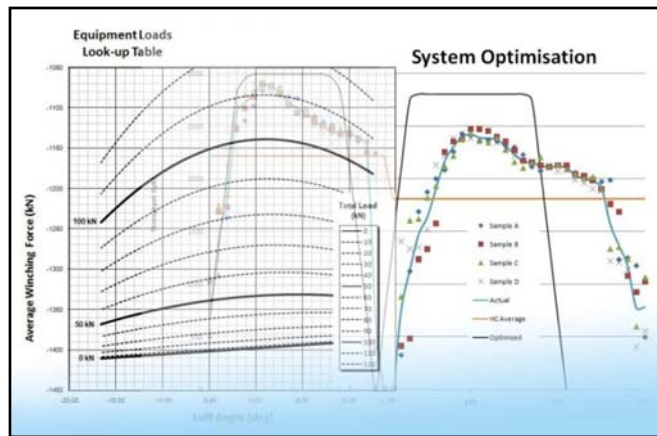
CONTACT DETAILS

EQUIPMENT VERIFICATION AND OPTIMISATION

Bulk materials handling equipment is often operated in an automated or semi automated manner which, over time, may be altered, for example by personnel intervention, equipment degradation, or replacement of components.

These changes to the mode of operation of the equipment may lead to unwanted outcomes such as a reduction in efficiency or safety. MMH Engineering can provide verification of the operation of the equipment in accordance with applicable standards and the equipment manufacturers design criteria. In many instances the mode of operation of the equipment may be optimised with the aim of safely achieving higher average throughput.

Custom made and easy to use look-up tables can be generated to allow owners and operators to quickly and easily determine if the equipment is being operated in a safe, and optimal, manner.



For further information, employee resumes, project experience and developments please visit;

www.MMHEngineering.com

CONTACT DETAILS