

Your partner in innovation and technology



Material Handling & Mining Capability Statement



Densep Technologies is a leading multi-disciplinary engineering and technology company offering a broad range of services, particularly in the mineral processing, mining, water, wastewater and environment sectors. Customers are served by our in-house team of engineers as well as our external partners through out Pakistan even at remote sites.

Densep Technologies's team of engineers and technicians are highly qualified and collectively have vast experience in a broad range of fields. An open-minded approach enables Densep Technologies to offer robust and efficient solutions. The benefits of these services are improved quality, reliability and availability of plants, greater safety, avoidance of unexpected operational problems, extended life and lower life cycle operating and maintenance costs.

Densep Technologies has significant experience with most material handling and mining machines, plants, facilities and structures including

conveyors, grinding machines, scrubbers, stackers/reclaimers, chutes, hoppers, bins, vibrating screens, feeders, dozer traps, car dumpers sampling stations and ore out-loading facilities

Our services, that have been provided to **owners, operators and manufacturers**, include

End to end engineering and design of new material handling and mining systems as well as sustaining works for example conveyors redesign, in-loading plants upgrades, throughput enhancement studies and rectification services,

specifications development and design audits, finite element stress analysis,

discrete element modeling, computational fluid dynamics,

full implementation and

commissioning supports for a variety mining machines,

life extension and troubleshooting studies.

The QA system utilised by Densep Technologies includes specific procedures for design, design review, project management, site troubleshooting, post-processing, analysis and reporting.

One of Denssep Technologies expertise is the engineering associated with large materials handling equipment including stackers, reclaimers, ship loaders, conveyors and conveying systems. As an experienced designer of these type of plants, Denssep Technologies has the technical expertise to provide a wide variety of engineering services. Some of the services offered by Denssep Technologies include:

- Investigation services including design auditing, concept design study, feasibility studies, plant life extension, risk and hazard assessment.
- Project management for construction and overhaul, including complete refurbishment projects,
- Design of machinery and associated peripherals from concept through to the detailed design of individual components for manufacture. Our design engineering methodology involves finding a solution based on innovative thinking, knowledge and engineering expertise.
- Complete electrical services including power reticulation design, control systems design and PLC programming,
- Procurement services including supply contract management, quality assurance in manufacture, etc.

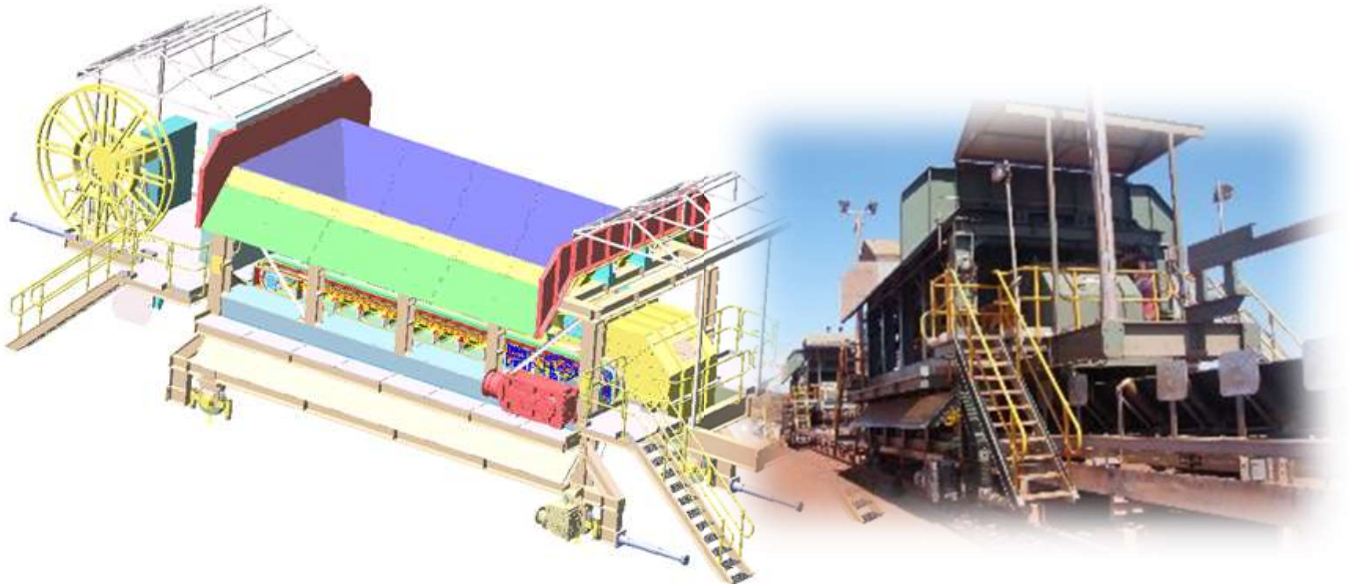
Stacker Reclaimer Thar Coal Handling Plant

Upon SECMC (Sindh Engro Coal Mining Company) request, Denssep Technologies had undertaken a detailed engineering review of the stacker reclaimer design and its specification to ensure machine compliance to international standards and had advised SECMC about avoiding a number of costly non critical machine features.



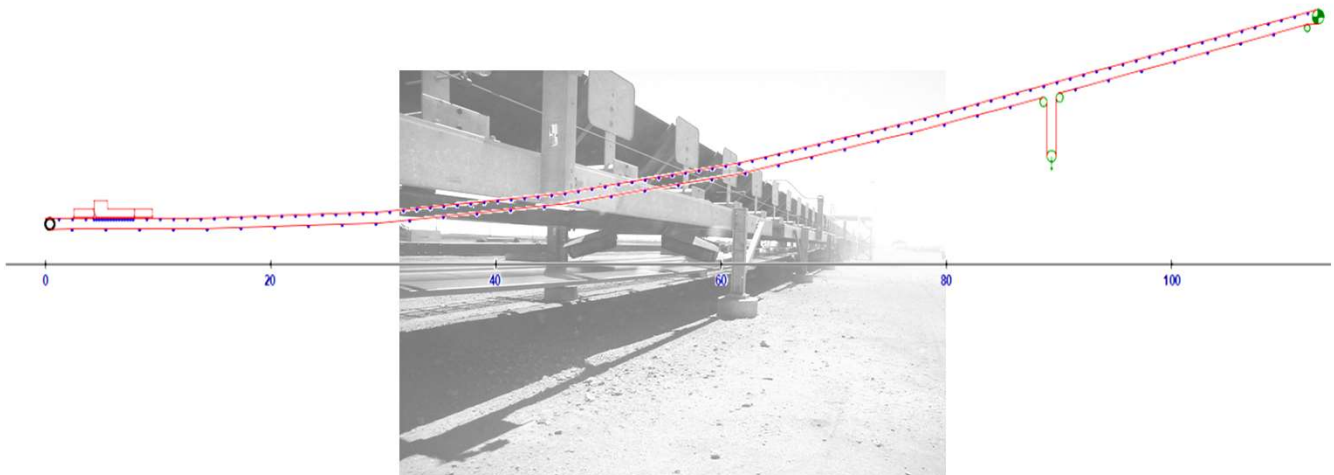
Bulking-in Hopper System

A 30 m³ dual side FEL fed hopper system was designed as a redundancy in an out loading circuit to ensure throughput continuation during reclaimer breakdowns. The machine was mobile and rail mounted over the stockpile reclaiming conveyor.



Conveyor Engineering and Design Review – Thar Coal Handling Plant

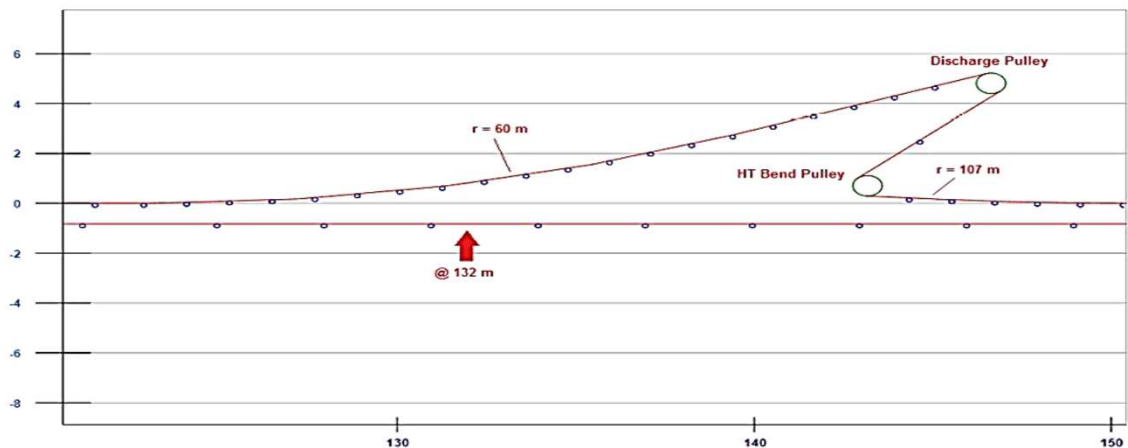
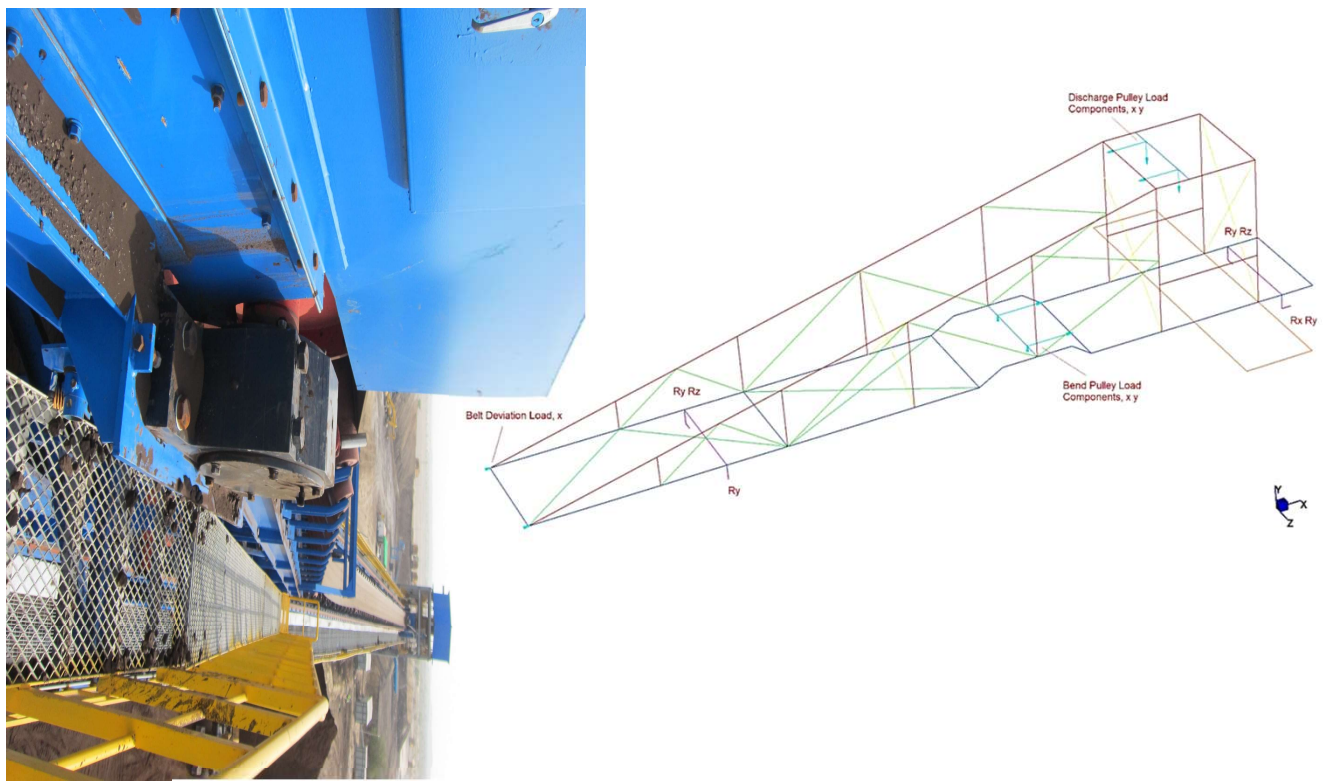
A complete engineering review of Thar Block II project conveyors 2021B, 2023A and 2024 was undertaken on SECMC request. The review involved full modeling of the entire conveyor systems from minimum available information. The review report had shown some serious shortcomings and inconsistencies. The review later helped in addressing the conveyor engineering issues in a structured manner.



Tripper Car Wind Load Assessment – Thar Coal Handling Plant

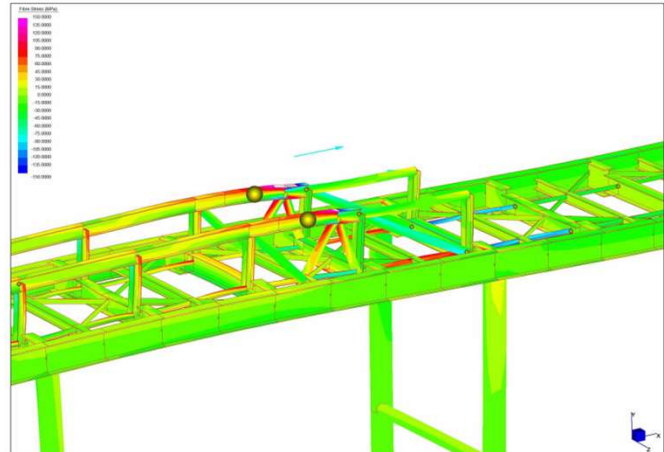
SECMC has requested Denserp Technologies to carry out calculations and analysis on CV-2043 tripper car to establish operational wind load limit. This information was become desirable after few incidents when tripper car drifted, uncontrolled, forward for tens of meters.

There was a concern that uncontrolled drifting had occurred due to excessive wind events though the recorded wind speed at the time of incident was never found excessive. The assessment had ruled out the wind event as the cause of the incident and had helped SECMC formulating safe machine control and operation strategies.



Buffer Stop Frame FEA – Thar Coal Handling Plant

The buffer stop frame and installation structure was reassessed to contain impact loads from drifting tripper car. The stop frame was analyzed locally while global effects of impact loads on conveyor supporting structure were estimated using sub-modeling techniques. The analysis had resulted in an efficient redesign of the stop frame while ensuring even load distribution to supporting truss and trestles.



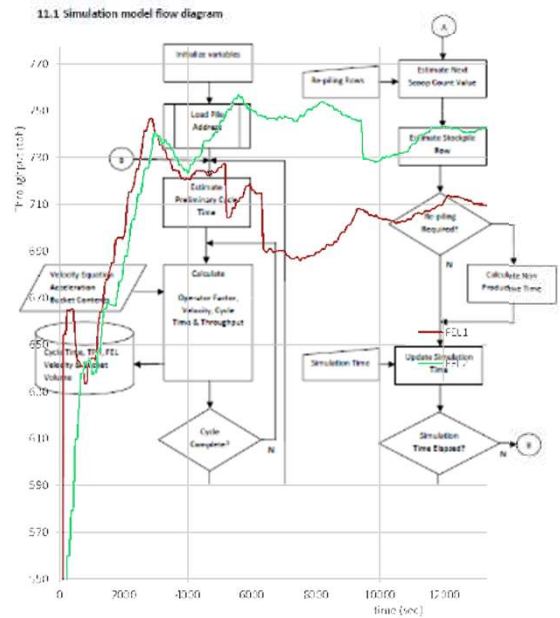
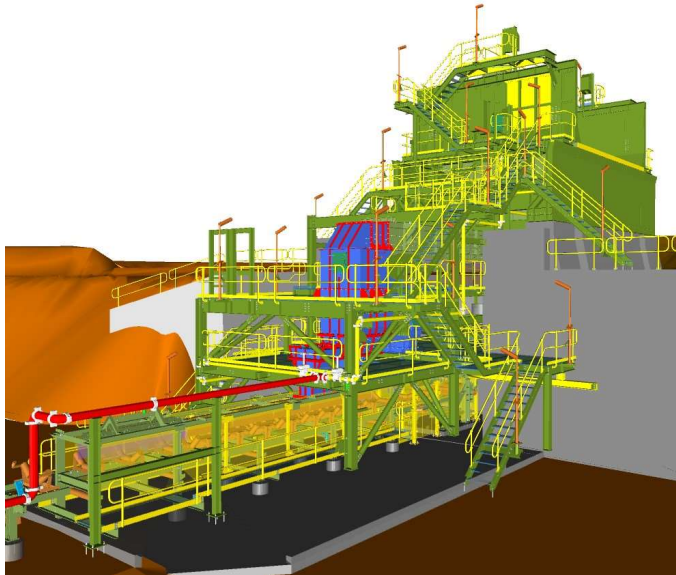
Radial Stacker Redesign – Griffin Coal Mine

The radial stacker truss, 1200 tph conveyor and the supporting carriage assembly was redesigned to extend stacking length by 10 m. The stacker was commissioned successfully and had resulted 40% increase in stockpile



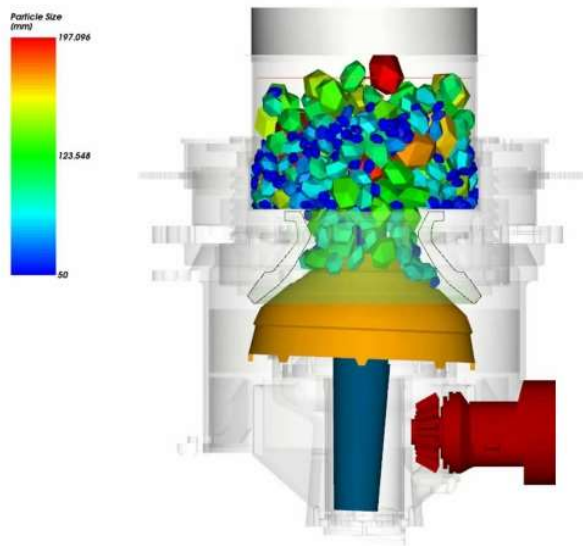
Dual Side FEL Fed Hopper Facility – Iron Ore Mine

A FEL fed hopper facility design was conceived, engineered and implemented from very high level client specifications. A desktop model to simulate plant throughput was developed from scratch to facilitate the optimum layout of the facility. The rigorous modeling and simulation had resulted in exceeding client’s throughput expectation within first six months of implementation.

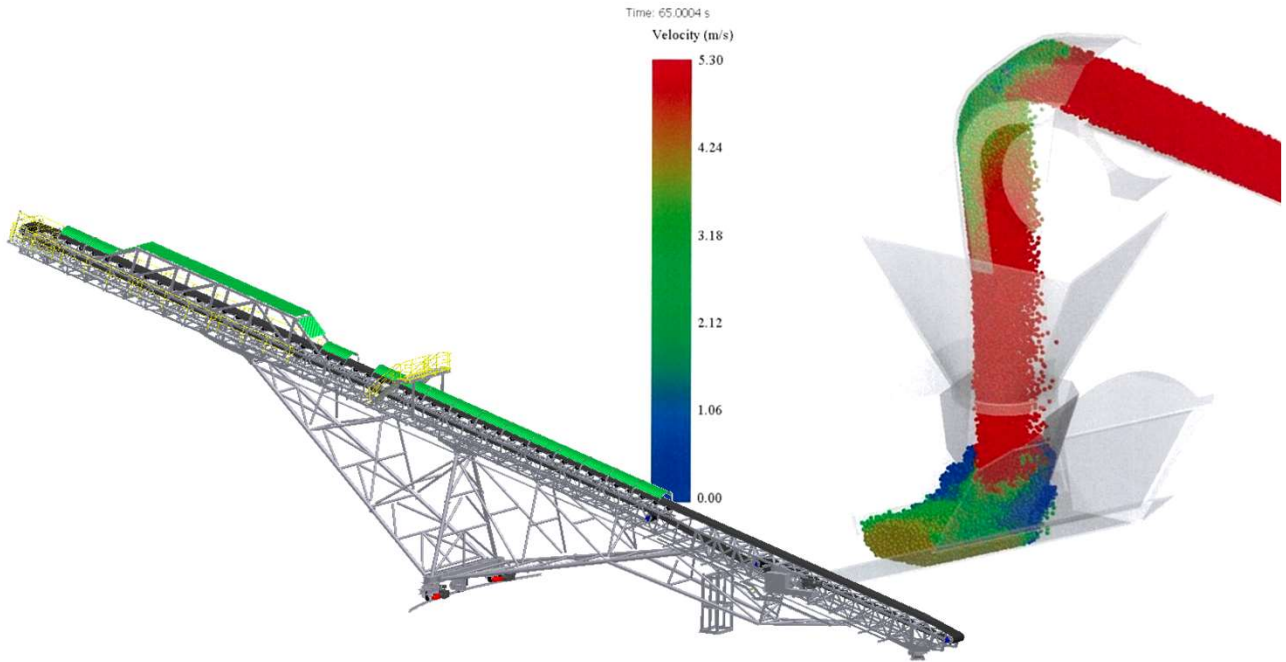


DEM (Discrete Element Modeling) Capability

Cone Crusher bogging event simulation to study overload capacities

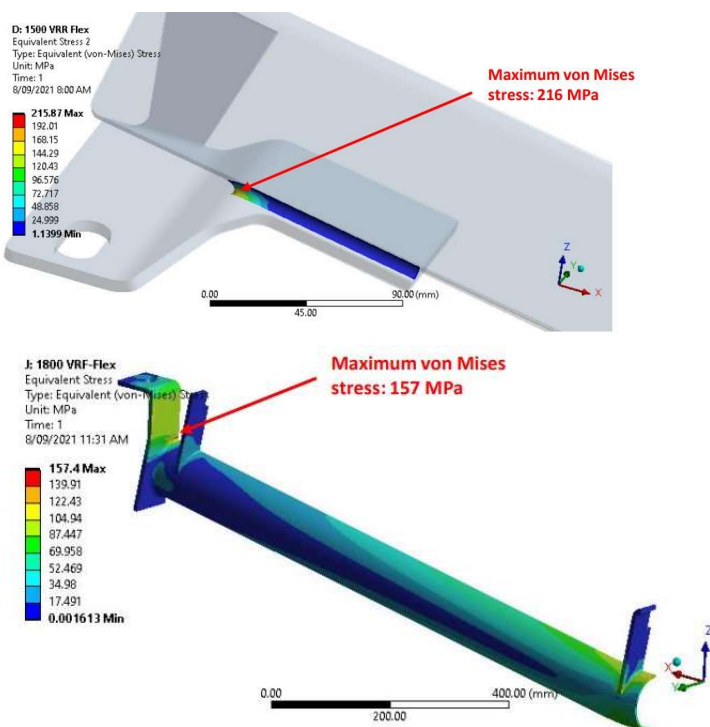


DEM model of a radial stacker chute for Lihir gold mine to investigate liners wear issues.

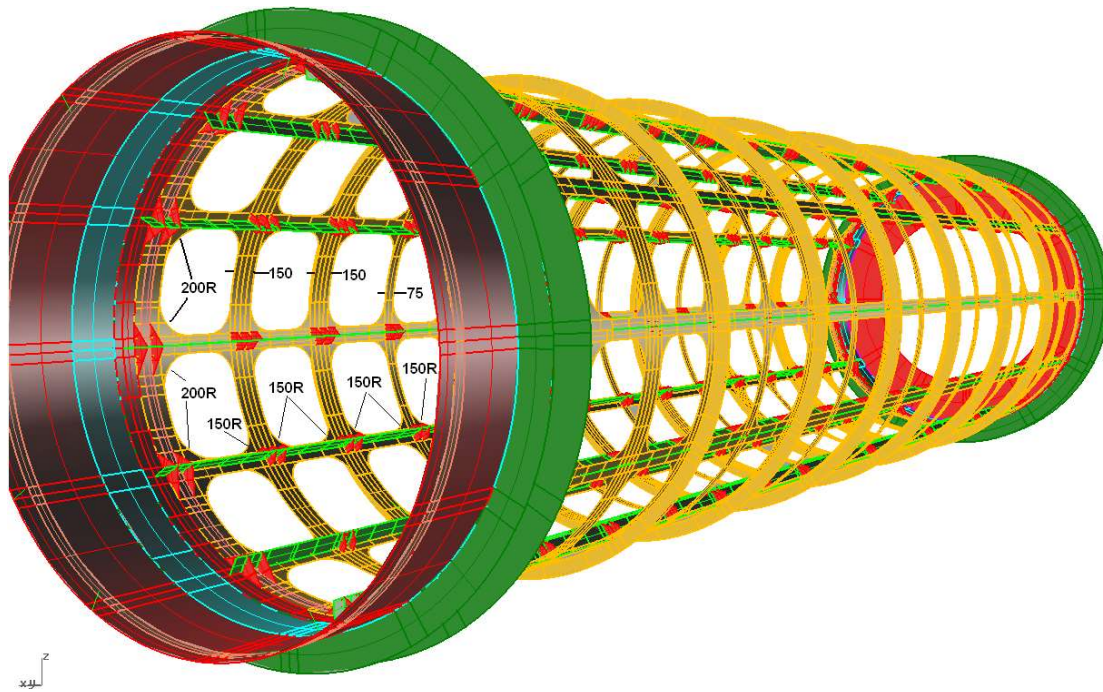


FEA (Finite Element Analysis) Capability

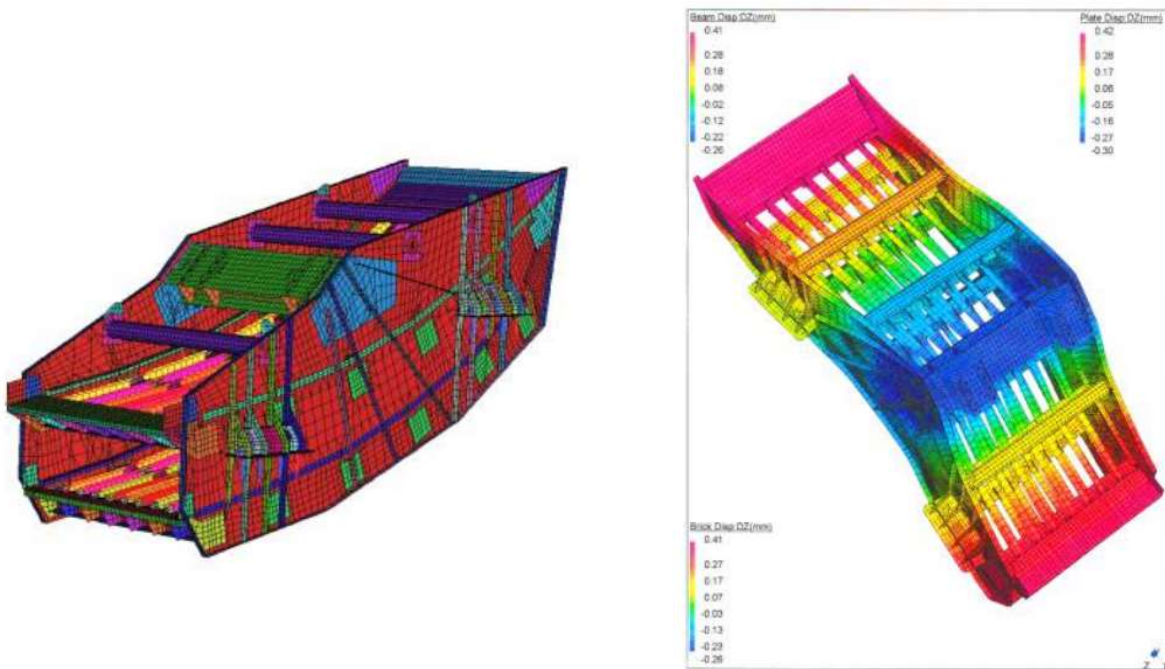
Idler design analysis and structural capacity reviews for high throughput (14,500 tph) conveyors

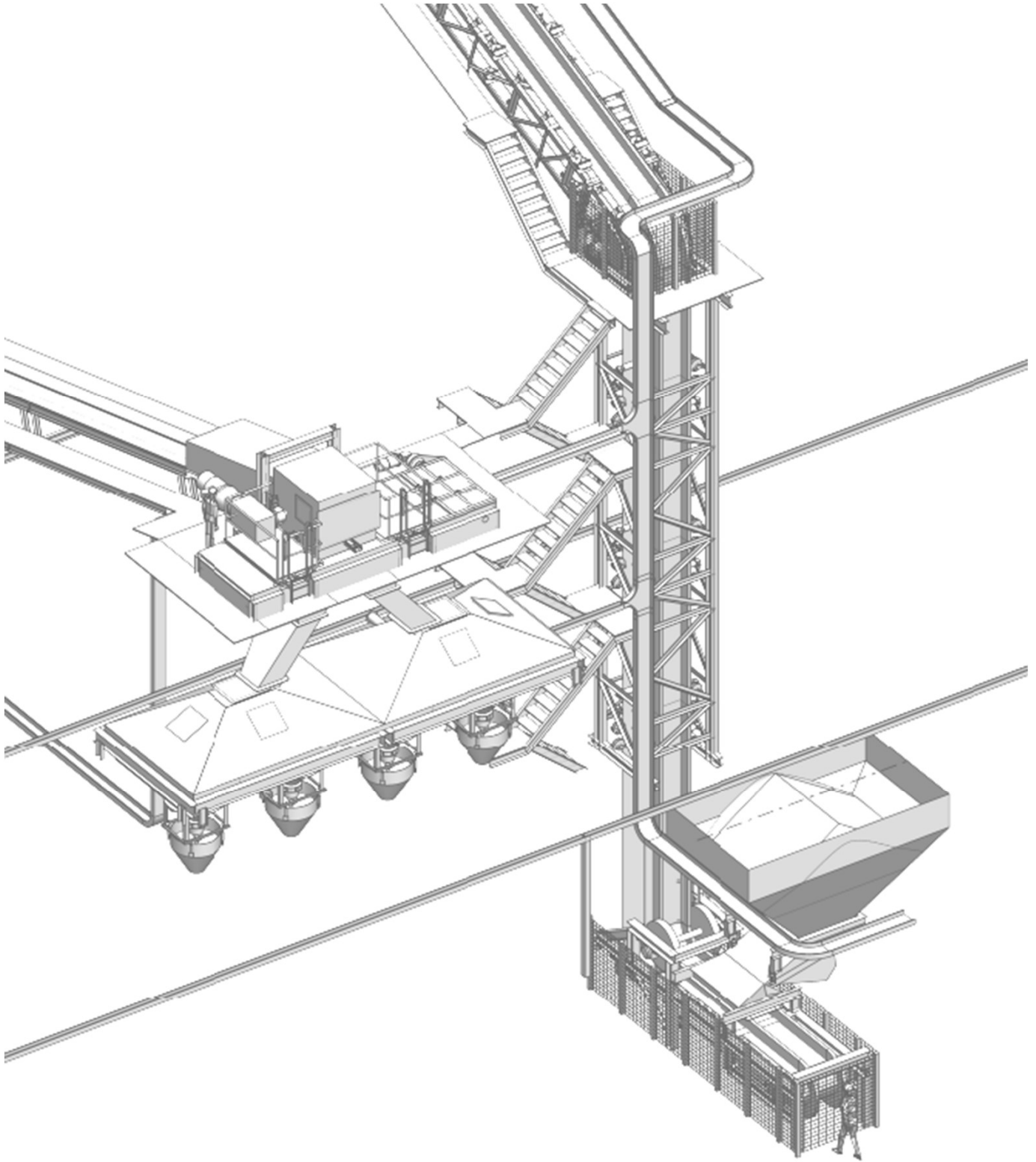


Complete redesign and fatigue analysis of Trommel screen for solid waste management plant



Condition audits, FEA and correlations, fatigue analysis, joint detailing and improvement suggestions for double deck screen





Conceptual CAD model of SRT Bulk Facility