CQMS Razer provides large surface mining and fixed plant products, equipment and wear parts.

CHALLENGE
- Reduce carbon footprint
- Increase payload
- Reduce maintenance costs
- Accurately predict performance with scale testing

OUTCOME
- 5% payload increase
- Lower maintenance costs
- 9% reduction in payload bell curve
- Scale plant accurate to 0.6% of actual field measured payload
- 19% energy saving ~ 630 MWh per annum
CASE STUDIES

**Redesign for cost effective manufacture**

- **Client:** CSIRO
- **Challenge:** Re-design strain meter product to reduce manufacture costs
- **Outcome:** Costs down from $120k to $30k
- **Involved:** High precision and exotic materials

**Engineering design department**

- **Client:** CQMS Razer
- **Challenge:** Cover all engineering research, commercialisation thru to product support
- **Outcome:** Successful long-term product development resulting in leading market performance
- **Involved:** Full engineering responsibility

**Vibrating screen design and development**

- **Client:** Vibrating Screen OEM
- **Challenge:** Carry out vibrating screen design analysis via finite element analysis for fatigue and natural frequency
- **Outcome:** Provide design modification to reduce stresses and manipulate stiffness and natural frequencies
- **Involved:** Complex finite element analysis modelling, interpretation of results, and advances in design

**Product design development/management**

- **Client:** Pace Engineers Group
- **Challenge:** Set up best practice design management procedures and development for SafeARC electrical current protection product range
- **Outcome:** Improved design and documentation systems
- **Involved:** Project management, training, best practice 3D modelling procedures

**Troubleshooting and design rectification**

- **Client:** RIO Tinto and GBI
- **Challenge:** Rectify problems with rope shovel, test OEM proposed solution, provide superior solution
- **Outcome:** OEM mods proven fallible via scale testing, LC proposed solution chosen, reduced solution cost
- **Involved:** Scale testing to prove proposed solutions, verification of field results matched scale test data

**Strain gauge testing & data logging**

- **Client:** BHP Hay Point Terminal Services
- **Challenge:** Stacker conveyor fatigue risk assessment
- **Outcome:** Successful full-time strain gauge monitoring
- **Involved:** Design audit, data logging, web-based reporting