PROGRAM 2:
SEPARATE

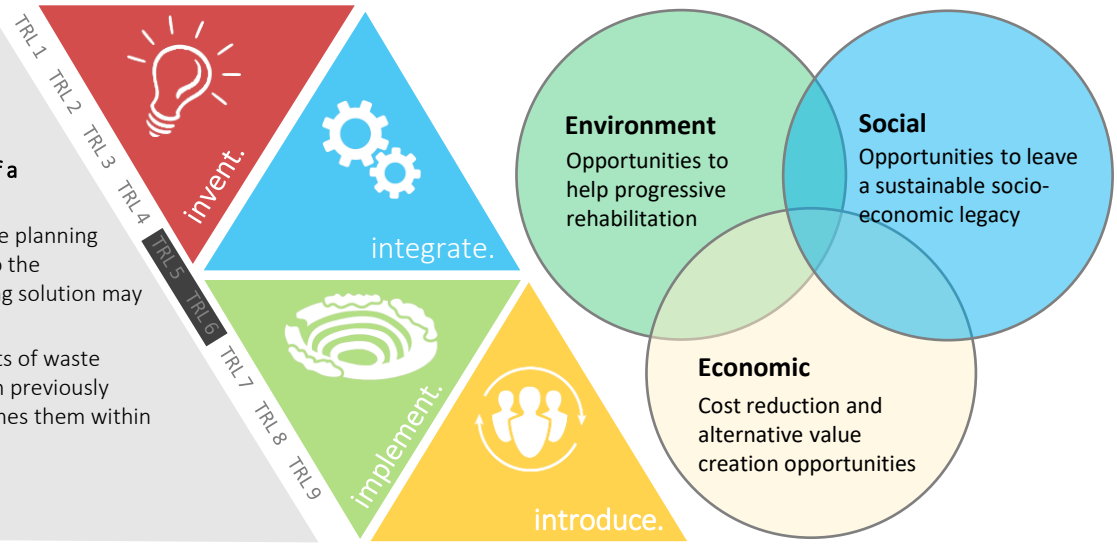
Valorisation of Grade Engineering® by-products

PROJECT P2-010

Identifying value in the by-products improves the total value proposition of a Grade Engineering solution.

By addressing the short-mid term mine planning implications the immediate barriers to the implementation of a Grade Engineering solution may be overcome.

This project also draws out the benefits of waste engineering, many of which have been previously investigated and understood, and frames them within the context of Grade Engineering.



Research collaboration

Mining3 is a world-leading research organisation, directed by its global mining industry members to develop and deliver transformational technology to improve the productivity, sustainability, and safety of the mining industry.

Mining3 possesses resources with subject-matter expertise in this area as well as the ability and experience to lead and support the type of research work here proposed.

CSIRO research capabilities in geology provide expertise in geological characterisation of Grade Engineering by-products.

CRC ORE's Implementation team are experienced in Grade Engineering and can identify or create the data for the most suitable use cases.

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Project Leader:	Amin Mousavi, Mining3
Timing:	September 2019 – December 2020
Participant:	Mining3, CSIRO

Background & aims

One of the desired outcomes of Grade Engineering is to produce additional streams of waste rejection as early as possible in the mining value chain. The benefit of this is experienced downstream however the separated engineered dry waste rock could potentially increase re-handling costs of coarse rejection.

This project seeks to both identify methodologies within the scope of short term mine planning to minimise the costs associated with early waste rejection. It will also identify opportunities within the scope of long term mine planning to make best or beneficial use of additional coarse rock, called Grade Engineering by-product material.

Combined, this will facilitate a systematic approach to developing a sustainable waste management strategy with a clear pathway to maximise value gained from Grade Engineering. This research will also create opportunities to leave a sustainable socio-economic legacy and to help progressive rehabilitation activities.

Focus on outcomes

The project aims to evaluate both short and long term economic and socio-environment impact of Grade Engineering waste rejection for typical ore bodies to derive benefit from early stage removal of new waste streams.

Outcomes will cover:

- Characterisation of Grade Engineering by-products
- Potential revenue from Grade Engineering by-products
- Socio-environment aspects of Grade Engineering by-products
- Cost-benefit model of Grade Engineering by-products
- Sustainable Grade Engineering by-products management strategy

Image (top): Sustainable Grade Engineering by-products management model

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Australian Government
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CRC ORE Optimising Resource Extraction