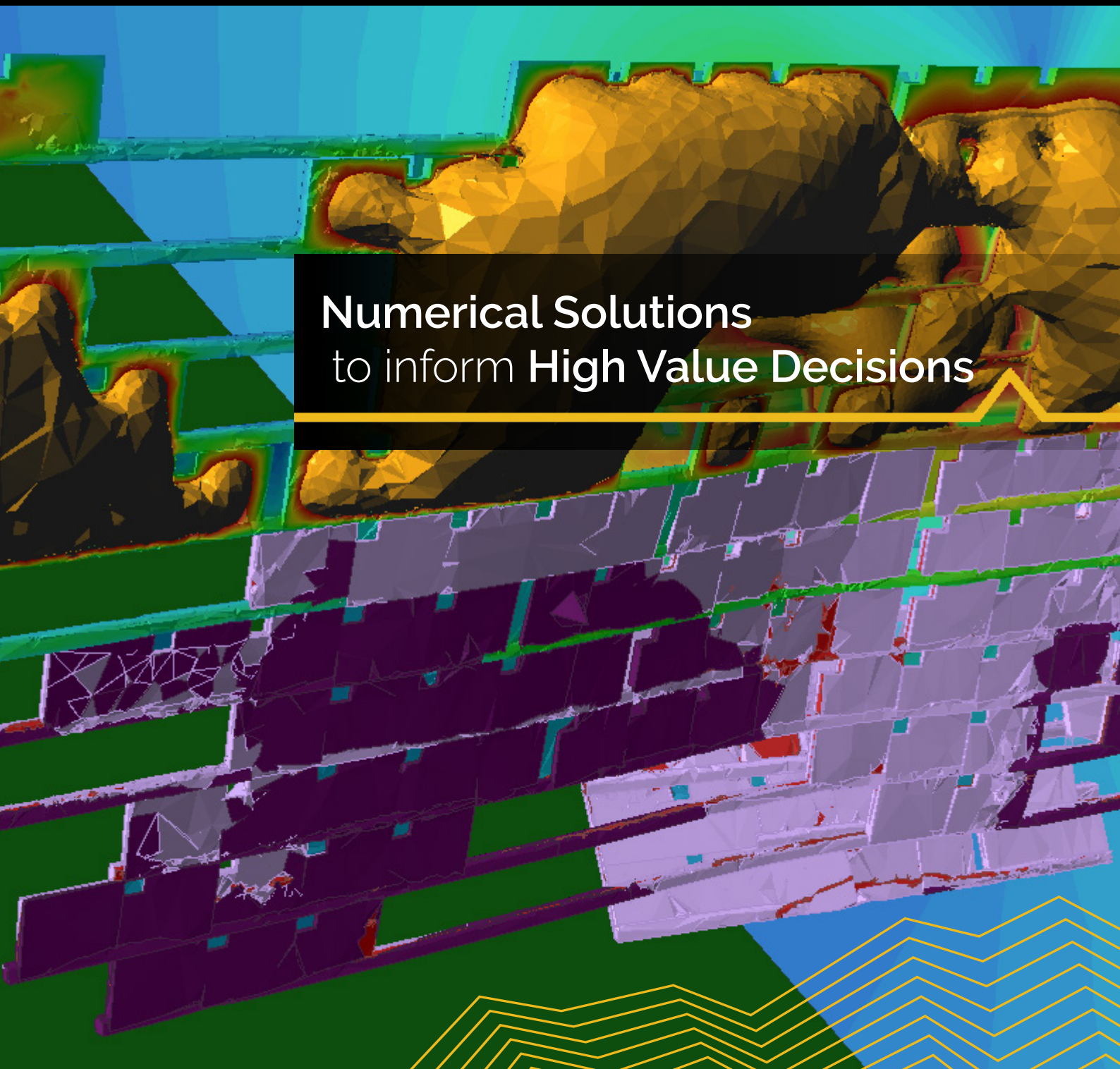
MINEGEOTECH

MAXIMISING VALUE THROUGH INNOVATION



Numerical Solutions to inform High Value Decisions

We do it all — From data collection to numerical modelling, and everything in between

The MGT Way is engineering advice grounded in rigorous data analysis, enabling robust design.

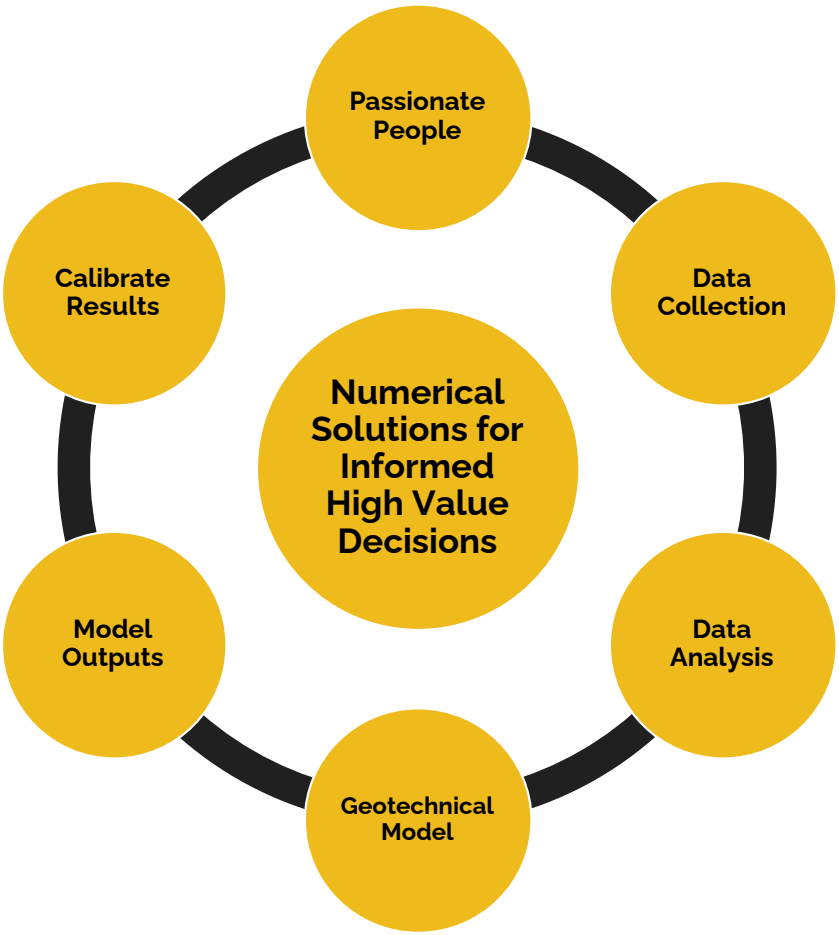
We use this approach to fuse expertise, great minds, and technology to change the way geotechnical and mine planning solutions are embraced to maximise value in the mining industry across Australia and the world.

Founded in 2010 by Dr John Player, MineGeoTech has offices in Perth and Kalgoorlie, Western Australia.

Get the details that add value

Our model results are an endpoint in the process of data collection, geotechnical domaining, statistical analysis, appropriate mass model parameters and yield mechanism selection.

It is a synthesis of all the data we collect to forecast rock mass performance and is then the starting point for calibration by taking multiple rock mass observations and assessing against model stages.



We promote the use of 3D Geotechnical Modelling

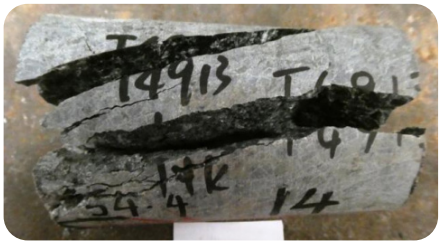
Data Collection:

Our team collects and analyses data such as:

- Rock mass logging by domains
- Intact strength properties
- Structural orientations from acoustic televiewer
- Hydrogeological investigations

Pre-Test Photo

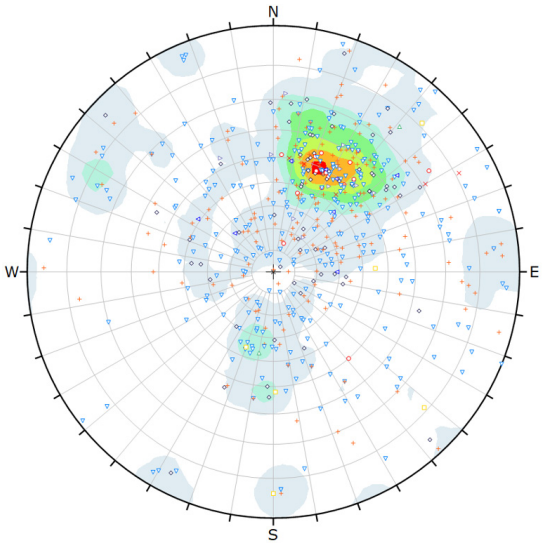
Post-Test Photo



Failure Angle to Vertical: 18.9° Shear on Structure

Current Filter Applied to Date: LODE

(GEOTECHNICAL DOMAIN == LODEF || GEOTECHNICAL DOMAIN == LODE || GEOTECHNICAL DOMAIN == LODET)



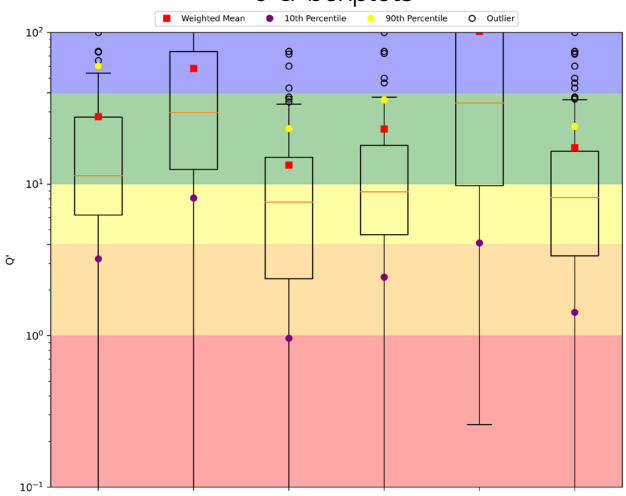
Symbol	TYPE	Quantity
◇	#1	67
×	#10	5
△	#11	2
+	#2	175
▽	#3	290
□	#4	6
◁	#5	8
○	#6	15
▷	#8	11

Color	Density Concentrations
	0.00 - 1.00
	1.00 - 2.00
	2.00 - 3.00
	3.00 - 4.00
	4.00 - 5.00
	5.00 - 6.00
	6.00 <

Contour Data	Pole Vectors
Maximum Density	6.16%
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Pole Vectors
Vector Count (Weighted)	916 (579 Entries)
Terzaghi Weighting	Minimum Bias Angle 15°
Hemisphere	Lower
Projection	Equal Angle

0 Q' boxplots

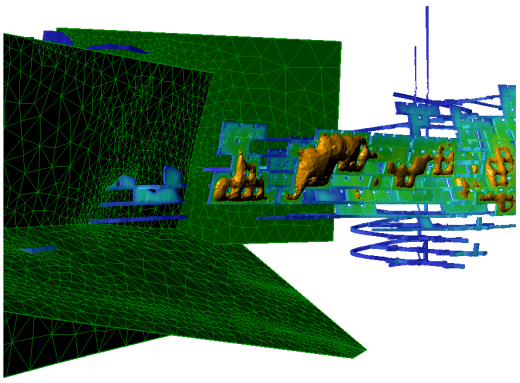


Data Analysis:

We can provide statistical descriptions of geotechnical domains for probabilistic stability analysis

Underground and Surface Mining Applications: Our data collection and analysis can be applied to both situations

Underground:



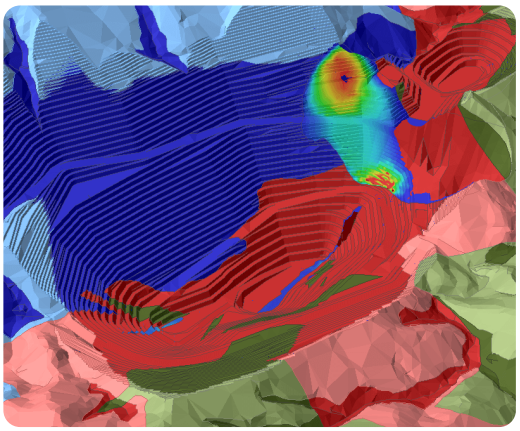
Inputs:

- Geology and geotechnical domains
- Faults
- Foliation
- Bedding
- Sequenced mine voids
- Rock mass classification parameters
- In-situ stress field
- Intact strength
- Groundwater

Outputs:

- Life of mine sequencing recommendations
- Ground support scheme requirements
- Decline stand-off
- Fault slip analysis
- Rock mass damage
- Pillar stability

Surface:



Inputs:

- Soil mechanics
- Hoek-Brown criterion
- Faults
- Groundwater
- Earthquake loading
- Anisotropic failure models
- Mine void instances

Outputs:

- Full 3D slope stability analysis providing factor of safety and probability of failure

With an integrated stream of data from geotechnical core logging, and statistical distribution of input parameters, we use the Hoek-Brown criterion to define the rock mass strength using triaxial strength data downrated by the Geological Strength Index (GSI).

This culminates with 3D inelastic finite element numerical modelling.

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Get in touch

For your next numerical modelling challenge, get in touch with our team to see how we can add value to your project with The MGT Way.

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