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PROFESSIONAL DEVELOPMENT TRAINING COURSES

Perth and Brisbane 2010

# Whittle Optimisation & Strategic Planning

Location:	Date:
PERTH	10-12 March 2010
	6 - 8 December 2010
BRISBANE	15 -17 March 2010
	4-6 August 2010

## Course Content: WHITTLE OPTIMISATION AND STRATEGIC PLANNING

This comprehensive three-day workshop on Whittle Optimisation and Strategic Planning is designed to give delegates the skills needed to optimise resource models for open pit mining projects. Time will be dedicated to the use of the software as a strategic mine planning tool. Data examples will be supplied, but delegates are requested to also bring their own data to work on, so that individualised guidance and assistance can be given while working on their own data.

### Overview

- Bringing together all the information from all the mining disciplines including: Geology; Geotechnical; Mining Processing; Financial Analysis
- How to use Whittle to select the size and shape of open pit that best suits your needs - Whittle nested pits, how they are created and how to use them, results files
- How to select the cut over from open pit to underground
- How to use Whittle to optimise cut-off grade
- How to assess risk involved in following a particular strategy e.g. selecting a long mine life vs. mining a sub-optimal pit to high grade the orebody

### The Whittle Process Structure:

- Block model import
- Re-blocking
- Slopes
- Pit shells
- Limits
- Analysis



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### The meaning of all the Whittle options and how to use them:

- Block model - importing a model, how to name elements, single element, multi-element, rock types, calculating tonnes and metal, setting up processing methods, coding the model with mining cost and processing cost, topography
- Re-blocking - optional, to speed up processing or "smooth" the pit shell, to extend the model limits
- Slopes - rectangular slope regions, using rock type slope regions, slope error, number of benches
- Generating pit shells - metal price and revenue factor, how Whittle generates a range of pit shells, metal price and units, selling cost and royalties, processing cost - which costs are allocated to ore and why (time based costs vs. volume costs), overview of the Whittle inputs spreadsheet, metallurgical recoveries, smelter recovery, mining dilution and mining recovery, mining costs, capital costs
- Limits - mining limits, processing limits, discount rate
- Analysis - explanation (analysing the range of generated pit shells using the selected metal price), the grand total analysis, meaning of items, exporting files and presenting in a spreadsheet, validating results

### Pit design:

- Exporting pit shells
- Selecting ramp location
- The iterative process

### Whittle as a strategic mine planning tool:

- Mine life
- Cut-off grade
- High grading and stockpiles

## Delegate feedback

Snowden prides itself on the standard of its courses and on the quality of its presenters. Feedback from our previous course participants includes the following:

"The entire course was valuable - exactly where (personally) I want to focus on career wise"

"Explanations of terms and requirements for pit optimising, and the inclusion of practical examples was very good"

"The practical aspect was superb"

"Running practical exercises and being able to ask about specific issues, and being able to go into these issues further was quite flexible"



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## Presenters

The course presenters will be chosen from Snowden's most experienced consultants.

### Allan Blair -Principal Consultant, Mining

*First Class Mine Manager's Certificate WA, MBA International UWA, BAppSc Mining Engineering WASM, BSc UWA*



Allan has more than 26 years experience in the mining industry, encompassing operational, management, technical and consulting experience in underground and open pit operations in Australia and overseas. He has recently rejoined Snowden after spending the past three years with Rio Tinto engaged in evaluating projects in the Pilbara, Africa and Europe, based out of London and Sydney. Allan spent a year as key liaison for the Mine Automation group based at Sydney University.

Allan recently delivered the 2009 underground mining planning and design short course as part of the Masters program for the WA School of Mines, and is familiar with the technical and operational aspects of both open pit and underground mining.

Allan's consulting experience includes a wide array of underground and open pit studies and project management, ranging from bankable feasibility studies and bank audits to scoping studies, underground and open pit optimisation and design. In addition, Allan holds an International MBA with specialist skills in project valuation, strategic planning and management consulting. Allan develops and presents Snowden's technical courses.

### Stuart Pederick - Principal Consultant

*BEng (Hons), University of South Australia; MEngSc, University of Queensland; GAusIMM*



Stuart is a mining engineer who has gained experience from working at a number of mines while completing his studies. Prior to joining Snowden, Stuart completed a Masters of Engineering Science degree with the CRC for Mining Technology and Equipment in Brisbane. Since joining Snowden, Stuart has worked on a number of feasibility studies primarily in the areas of open pit design, optimisation and scheduling. Stuart has also provided site based mine planning support to Olympic Dam Operations. Stuart also provides mentoring and training in Whittle optimisation and strategic planning.

## Fees

Payment required at time of registration

This 3-day course costs AU\$3,900 + GST per person. This fee includes refreshments and lunch.

PLEASE NOTE:

- A 5% discount is offered if paying by credit card.

## Laptops for practical exercises

PLEASE NOTE: Attendees are please to bring their own laptops for courses with their Whittle dongles signed out and available for use in the practical exercises.

## Mentoring

Learn while working on your own data.

Snowden provides one-on-one technical mentoring to help develop your knowledge, skills and experience. Take advantage of Snowden's 23 year knowledge and skills base to help:

- build your competence
- fast-track your technical knowledge
- assess your current capabilities
- set your professional development goals
- increase your confidence

## On-site customised courses

All our courses can be customised to suit your specific training requirements and presented either on-site or at a venue of your choice. Please contact Diana Titren, Training Manager, on +61 8 9211 8670 or [training@snowdengroup.com](mailto:training@snowdengroup.com) for further information.

## Contact and registration

For more information on Snowden's Training and Mentoring programmes, please contact Diana Titren, Training Division Manager, on +61 8 9211 8670 or [training@snowdengroup.com](mailto:training@snowdengroup.com)

To register, please complete the following form and either fax it to Shannon Aitken, Training Coordinator, on +61 8 9322 2576 or email to [training@snowdengroup.com](mailto:training@snowdengroup.com)

Please visit [www.snowdengroup.com](http://www.snowdengroup.com) for more information about our training courses

### Snowden Office Contact Details

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