



Blast It Global Pty Ltd
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Bruce Lee **Drill & Blast Specialist**

Graduate Diploma in Mining Engineering
G1, G8, G9 Site Supervisor
Queensland Shotfirer Permit
New South Wales Shotfirer Permit
Western Australian Shotfirer Permit
Cert IV Training & Assessment
New South Wales White Card
RIICOM201A – Communicate in the workplace
RIIERR205A – Apply initial response first aid
RIIERR302A – Respond to local emergencies and incidents
RIIGOV201A – Comply with site work processes/procedures
RIIOHS201A – Work safely and follow OHS policies and procedures
RIIRIS201B – Conduct local risk control
Frontline Project Management
International Society of Explosives Engineers (Member)
Qualified Trainer for DetNet electronic initiation systems

Expertise

Bruce specialises in the field of open cut metalliferous mining, coal mining, quarry blasting, tunnelling and underground metalliferous technical support. Bruce is a drill and blast specialist who delivers environmental blasting controls and advanced initiation sequencing to promote improved fragmentation as per customer requirements, whilst still able to optimise results across all areas of open cut and underground drill and blast methodologies.

Prior to joining Blast It Global, Bruce was working as a drill and blast contractor for Capital Mining at their Egypt Sukari Operations after a six year role with AEL Mining Services and a fifteen year role with Orica Mining Services, where he used his specialist drill and blast skills towards improving numerous sites drill and blast safety and productivity, with a clear focus on safe and efficient drill and blasting practices. Bruce also provided advanced blast analysis to assist several customers and sites worldwide. Bruce was recently heavily involved in the research and development of the DetNet electronic firing systems which are currently used by AEL Mining Services and Dyno. Bruce also assisted in the development of specialised open cut and underground initiation systems for Orica Mining Services during his time as a Senior Blast Technician.

To become a drill and blast specialist, Bruce has had to research and develop methods for analysing the influence that geology, ground conditions, explosive selection, blast



parameters, detonation physics and explosive product development to ensure the customer has specific blast outcomes, dependant on their mining methodology. This pragmatic approach is a key driver behind his ability to provide highly successful outcomes to customers across a broad sector of the drill and blast industry.

Summary of Experience

Bruce Lee has had a career dedicated to drill and blast, commencing his career as a bench hand on an Orica blast crew in 2000 and moving through every drill and blast role from MMU operator, to Shotfirer, to Leading Hand, to 2IC to Site Manager in Australia and PNG, before eventually moving to Orica Technical Services. Some of positions include, Orica blast crew at Century Zinc, Orica Site Manager and relief Site Manager for Century Zinc, Mt Isa, Ok Tedi and Lihir from 2000 to 2006. Orica Blast Technician for 2006 to 2009 and Senior Blast Technician from 2009 to 2014 supporting both open cut metals and coal sites, quarries, underground metals and tunnelling operations around Australia, New Zealand, Papua New Guinea and Singapore. Bruce Lee also worked closely with the Orica R&D department to develop the Ikon, Unitronic and eDev electronic firing systems. From 2014 to 2020 Bruce Lee worked at AEL Mining Services as their Australian Technical Services Superintendent, supporting their operations in Australia, Indonesia, South Africa and Botswana. During his time with AEL Mining Services he worked closely with the DetNet R&D department to develop the world class IntelliShot electronic blast system from the original DigiShot Plus electronic firing system. Bruce Lee expanded his BLNK Industries Pty Ltd company to encompass drill and blast consultancy, training and product support, with his first project being to train a new drill and blast crew and develop a complete training package including procedures for Capital Mining at their Sukari Gold Mine project in Egypt for 4.5mths in 2021.



KEY BLASTING PROJECTS

Century Zinc Mine (Australia) – Orica Site Manager – Developing/implementing process improvements for quality control, drill and blast procedures including hot and reactive ground QA/QC protocols.

Lihir Gold Mine (Papua New Guinea) – Orica Site Manager and Technical support - Project to mitigate geothermal outbursts, develop and deliver training of drill and blast procedures for extreme loading of explosive products in 100+ degrees hot and reactive holes.

Morevale Coppabella Coal Mine (Australia) – Orica Technical support - Drill and Blast design developing the Strata-Blast electronic firing technique to fire multiple benches in the same firing window without coal dilution.

Singapore Electrical Utility Tunnel Projects (Singapore) – Orica Technical support - Drill and Blast design, ensuring compliance with Singapore strict vibration controls firing the utility tunnels within 20m of roads, business structures and accommodation structures. Provided training and R&D technical support for the Orica eDev electronic firing system.

BHP Cannington Underground Gold Mine (Australia) – Orica Technical support - Drill and Blast review of current drill and blast practices and procedures. Identified key areas for cost savings combined with productivity improvements that would realise additional costs benefits. Projects involving the installation of the Ikon CEBS Leaky feeder remote firing system and the development of the eDev underground development electronic detonator system to show a cost neutral to change from nonel long delays to eDev through savings in holes drilled per face and shotcrete through effective perimeter control.

Gunpowder Underground Copper Mine (Australia). - Orica Technical support – Project support and management of the crown pillar mass blast of 27 rings and 4 rings of an additional production blast in the same firing window, with no damage to services and operational within 48hrs.



Marvel Loch Underground Gold Mine (Australia) – Orica Technical support – Project support and management of a mass blast of 42 rings in the same firing window, with no damage to services and operational within 48hrs.

Boddington Gold Mine (Australia) – Orica Technical support - Blast analysis and initiation design for electronic initiation sequencing. Implementation, training and procedural development of the Ikon electronic firing system and R&D development.

Ensham Coal Mine (Australia) – Orica Technical support – Post 2008 floods which wiped all drill and blast records and facilities off the lease. Build up a drill and blast design procedural base to support Strata-Blast and cast blasting applications. Designing all the initial post flood blasts and training of personnel in the Ikon electronic firing system.

Ok Tedi Drainage Tunnel Project (Papua New Guinea) – Orica Technical support – Project management on a solo task to apply the use of pre-split product (due to lack of bulk product delivery systems) and DevelDet nonel system to blast a 250m pilot tunnel for the TBM which was built on site over a cliff edge below the Ok Tedi mine lease over a period of 3mths.

Newlands Coal Mine (Australia) – Orica Technical support – Project management for the roll out and training of Orica Engineers\Technicians and blast crew personnel in the safe use of the Ikon electronic firing system to improve cast, fragmentation and productivity.

Porgera Underground and Open Cut Gold Mine (Papua New Guinea) – Orica Technical support – Drill and Blast review for both the open cut and underground operations. Training in the safe use of explosive products with recommendations to improve fragmentation and productivity. Implementation of the Ikon electronic firing system for the underground mine, which involved training of the Barrick underground Engineers and shot crew, with blast design support.



St Ives Gold Mine (Australia) – Orica Technical support – Drill and Blast review, training for blast crew and design support for breaking through from the underground to the open cut.

Macraes Oceana Underground Gold Mine (New Zealand) – Orica Technical support – Drill and Blast review. Implementation of the Unitronic and Ikon electronic firing systems.

Granny Smith Underground Gold Mine (Australia) – Orica Technical support – Implementation of the CEBS (Central Electronic Blasting System) and conducting training for the safe and efficient use of explosive products.

Ernest Henry (EHM) Underground Copper/Gold Mine (Australia) – Orica Technical support – Design and firing of the dual fan chambers to extend the mine life using the eDevII electronic firing system and the hypercharge underground emulsion delivery system.

Jwaneng Diamond Mine (Botswana) – AEL Technical support – Review of current Drill and Blast practices. Provided recommendations to improve fragmentation, productivity improvements, training and optimising safe blasting practices.

Sishen Iron Ore Mine (South Africa) – AEL Technical support – Review of current drill and blast practices to reduce the rate of misfires using electronic firing systems. The initial application misfire rate was 1:14 and after the review and training over a period of 4wks, implementing the required changes, the site recorded 1:7,000 application misfire failure rate, which above the global standard of 1:5,000 for electronic detonators.



AEL Mining Services (Australia and Indonesia) – AEL Technical support provide technical training (1 week course) for Thiess Engineers\Technicians and blast crew on the use of DigiShot Plus and IntelliShot electronic firing systems to improve fragmentation. Use of Blasting Analysis Modelling Tools to improve skill level of Thiess Engineers\Technicians and blast crew. The training took the Thiess projects at Mt Owen, Mt Pleasant, Lake Vermont and Burton coal mines to average an application misfire failure rate of 1:30,000 electronic detonators which is 300% above global best practice.

Sukari Gold Mine (Egypt) – BLNK Industries Drill and Blast Consultancy – Train a new Capital Mining Drill and Blast crew with little or no experience to conduct blast design, QA/QC of drilled patterns and adjust where required, load all the blast holes to world class standards, tie-in the nonel firing system and conduct changes where required to world class standards, fire the shots safely and on time, and conduct post blast evaluations to ensure that any areas for improvement are captured and brought up in their daily tool box talks. Develop a complete Shotfirer and Blast crew training package for the Capital Mining team to use globally and develop Capital Mining Sukari site specific Drill and Blast procedures.



AREAS OF EXPERTISE

- Open Cut Metals Drill & Blast design
- Explosives Project Management
- Open Cut Coal Drill & Blast design
- Training/Assessor Drill and Blast Open Cut & Underground
- Quarries Drill & Blast design
- Tunnelling Drill & Blast design
- Plant Development
- Blast Crew Management
- Drill and Blast Coordinator
- Site Manager
- Tunnelling Drill & Blast Crew
- Underground Drill & Blast design
- Man Management
- R&D Development of Firing Systems
- Hot & Reactive Ground Management
- Bulk Explosives Manufacturing
- Logistical Management
- Waste Management
- Misfire Management
- VOD Trace testing and product development
- Electronic/digital Blasting Applications
- Project Management
- Technical Services
- ANE Production and management
- Mine Scheduling Open Cut & Underground
- Plant Maintenance
- Business Development
- Environmental Management
- Document/Procedure Writer & Presenter

