



**SAIMM**  
THE SOUTHERN AFRICAN INSTITUTE  
OF MINING AND METALLURGY  
**JOHANNESBURG BRANCH**



## THE FUTURE OF DIAMOND LIBERATION AND RECOVERY

Presented by

Jeremy Edward Clarke, Director Paradigm Project Management (Pty) Ltd

In recent years, the design of diamond recovery plants has undergone significant changes.

The introduction of autogenous milling for diamond liberation has allowed for the improved recovery of large diamonds without significant damage. This allows for decreases in the unit processes required and therefore the simplification of the overall plant thereby reducing both capital expenditure and operating costs.

These changes impact on the much neglected interface with the mining methods used to generate the plant headfeed material. This is reviewed and concludes with some economically beneficial inter-disciplinary integration that can be undertaken now.

Many of the other changes in plant design have been driven by the increase in computer processing power that has enabled high capacity sorting to become economically viable, including NIR, XRF and XRT technologies.

An area that is much neglected in the design of diamond plants is the integration of the essential security systems into the process engineering design. The impact of the new technologies on this is reviewed.

Benchmarking of these new systems has indicated that there are significant decreases in capital expenditure and operating costs which have meant that the diamond mining industry is one of the few that remains relatively buoyant in the current economic climate.

What does the future hold?

The presentation will conclude with a final overview of the proposed methodologies that diamond mining companies should adopt in order to improve their ability to successfully develop diamond mines. These are considered to be highly relevant to other commodities as well.

**About the presenter:**

Jeremy Clarke started his career in the mining industry with the Anglo American Corporation group of companies as a trainee metallurgist. He spent twenty years with the company gaining experience in gold, uranium, copper, and diamonds and rose to the position of Consulting Metallurgist for De Beers where he was responsible for the metallurgical excellence in their plants worldwide.

He left De Beers to start his own mining companies and successfully started four new ventures in the gold, diamonds, copper and emerald industries which were all subsequently listed on the TSE and AIM exchanges between 1997 and 2003 raising over US\$100m in investment. During that time he acted as President, CEO, and Director on the Boards of these various companies.

In 1999 Jeremy founded Metcon, a metallurgical consulting business that concentrated mainly in the diamond mining arena and eventually merged with Paradigm Project Management (Pty) Ltd (PPM) in 2008.

Jeremy is now a Director and owner of PPM which has celebrated 11 years of project management in the southern Africa mining sphere. It has completed over 160 projects in that time, in 20 countries covering 18 commodities ranging in value from R2 million to R450 million.

**Date:** Thursday 16th February 2017

**Time:** 17:00 for 17:30

**Venue:** Worley Parsons, 39 Melrose Boulevard, Melrose Arch

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