UNDERGROUND MINING DEVELOPMENT

Focused on evolution, not revolution

INDUSTRY INTEL
Shaft Sickers, now owned by the UMS Group of companies and one of the world’s longest standing ultra-deep level shaft sinking companies, has over the decades pioneered many groundbreaking mining methods which have seen it perform at the forefront of sinking. During its early years, the company became known for its innovative approaches to improving sinking methods. To retain this position, the company has as its goal to drive evolution rather than revolution in the industry, MD of Shaft Sickers Southern Africa THABO MOLOTO tells LAURA CORNISH.

Traditional sinking and underground construction methods have over recent years come under question due to legacy safety concerns. The result has seen some industry players dedicate significant resources and time to researching and developing new mechanical/technical sinking methodologies and practices as opposed to the more traditional sinking approaches. “To date, these innovations remain somewhat unproven and untested in a southern African context and will require heavy cash injections to implement and then may not guarantee success,” explains Moloto. “Whilst I don’t question their increasing relevance moving into the future, most of the technologies are a long way off from being commercially viable when considering the current poor investment and economic climate in our industry. The southern African mining industry is largely in no position to consider such costly and largely untested new-age options.”

In light of this, Shaft Sickers has adopted an alternate approach to advancing and modernising shaft sinking processes which aims to address health, safety and environmental legacy issues associated with sinking and underground construction without completely altering the use of traditional sinking methods. Moloto believes the company’s approach will effectively address governments’ and the greater mining industries’ safety concerns and through this achieve milestone goals which remain impacted by the sinking fraternity.

“Our approach aims to incorporate new technologies with current sinking practices and in so doing improve production efficiency plus health, safety and environmental conditions while simultaneously ensuring the delivery of new shafts, on time and on budget. We thereby ensure our clients gain access to their ore bodies as quickly as possible with minimal risk of project overruns due to the use of untested methodologies.” The emphasis at this stage is on the evolution of proven methodologies rather than revolution.

Moloto is specifically referring to the systematic incorporation of multi-functional electro-hydraulic machinery throughout the various stages of sinking (lashing, drilling, blow overs, shotcreting, and the like) as opposed to using older/dated pneumatic equipment.

Modernised traditional shaft sinking methodologies are still well suited to meet the mining industry’s current needs

Our strength has always been in the development of ultra-deep shafts, especially as engineering considerations and ground conditions become more demanding and challenging at depth,” Thabo Moloto
Integrating these technologies will significantly reduce the number of people in the shaft bottom or production face without compromising on development timeframes while reducing noise, potential fume and heat levels and diesel spillages. “Preventing project overruns is critical in ensuring client net project values and investment rate of returns are not compromised. This is a priority area for Shaft Sinkers and something we pride ourselves in delivering on.”

“This new approach also takes cognisance of Africa’s need to maintain and create job opportunities in the sector, which would largely be eradicated using mechanised techniques. In fact, not only will our technique retain local labour skills sets and employment, it will also enhance it through new multi-skills training and development,” adds UMS group business performance director Andrew Moore-Boyle. “This is essential for the African mining sector which continues to play a vital role in job creation,” Moloto continues.

In line with the incorporation of current technologies, some of these activities can also be undertaken in a remote controlled environment which has the added benefit of reducing worker fatigue.

It is important to note that Shaft Sinkers is not opposed to revolutionary and industry transformative technology research and development (such as vertical shaft boring machines) and is eager to explore and utilise the best methodologies available to deliver the best shaft sinking service to its clients at the right time. “But it remains important to focus on the current needs of the industry and deliver a service that guarantees the desired outcome now. Our core focus will always be reducing client risk by ensuring they gain access to underground ore in order to start mining as quickly and efficiently as possible.”

The approach to shaft excavation using specially designed multi-functional machinery has now been incorporated into all of its new project tender bids. “We have been working on refining and implementing this new technique for the last three or four years and are now comfortable to deliver our first modernised shaft sinking venture, which looks set to be in South Africa,” Moloto highlights. “Thus far, our new technological techniques have been well received by the industry.”

Once this new sinking process has been bedded down, Shaft Sinkers will then look to improving it further, in particular regarding increasing the sink rates without compromising on safety,” Moore-Boyle outlines.

“There is undeniably still a strong business case to use more modernised traditional methods well into the foreseeable future, especially in an environment driven by the need for cost effective sinking solutions. Ultimately we believe that we can safely and cost-effectively sink shafts for clients by introducing innovative technology enhancements to existing sinking methods without incurring additional risks associated with unproven technologies,” Moloto concludes. MRA