

MINING

DEVELOPMENT MAGAZINE

MDM JULY - AUGUST 2024

Cover Photo

**Breathtaking view of
Black Mountain's coal
mining site, the highest
peak in Kentucky, USA**



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Actively Advancing the Youth of Our Nation



As South Africa commemorates Youth Day on June 16, it is a time to reflect on the historical significance of the day and the continuous struggle to bridge the inequality gap that persists in our society. This year's theme, "Actively Advancing Socio-Economic Gains of Our Democracy," calls for a renewed focus on the education and empowerment of young people in order to eradicate unemployment—a mission that organisations like Afrika Tikkun are passionately pursuing.

The Historical Significance of June 16

Youth Day marks the anniversary of the Soweto Uprising in 1976, a pivotal moment in South Africa's history when students took to the streets to protest against the oppressive Bantu Education Act and the enforcement of Afrikaans as a medium of instruction. The bravery and sacrifice of these young individuals catalysed a movement that would eventually contribute to the dismantling of apartheid; and yet the present challenge remains to be inequality and unemployment

The youth of today grapple with an alarmingly high unemployment rate. This not only hampers individual growth but also stymies the socio-economic development of the nation as a whole.

Afrika Tikkun's Role in Youth Development

For 30 years, Afrika Tikkun has been at the forefront of addressing these challenges. With a holistic development model that spans from early childhood development to career readiness, Afrika Tikkun has, to date, reached over 320 000 young people, equipping them with the skills necessary to thrive in the modern economy. Their programmes are designed to provide the education and social support that extends beyond mere job placement, fostering a sense of hope and dignity among the youth.

Bridging the Gap

The work of Afrika Tikkun is a testament to the power of collective effort in bridging the inequality gap. By providing access to education, skill development, and employment opportunities, this remarkable organisation is actively contributing to the socio-economic gains of our democracy. Their success stories are a beacon of hope, showing that, with the right support, the youth can overcome seemingly insurmountable barriers and become productive citizens.



A Call to Action

As we commemorate this day, let us not only remember the sacrifices of the past but help to overcome the challenges of the present. It is a day to celebrate the indomitable spirit of the youth and to commit to actively advancing the socio-economic gains of our democracy. Let us all—government, private sector and civil society—work together to support initiatives like Afrika Tikkun's and ensure that every young person has the opportunity to fulfill their potential.

In the spirit of Youth Day, let us pledge to create a more equitable and prosperous future for all South Africans, where the dreams of the youth are not hindered by the circumstances of their birth but are instead nurtured to fruition. Together, we can build a nation that truly embodies the ideals for which the youth of 1976 bravely stood.

This day serves as a reminder of the ongoing journey towards equality and the critical role that youth development plays in achieving the socio-economic success in our country. As we honour the memory of those who fought for freedom, let us pledge to become actively engaged in the work that remains to be done. Happy Youth Day, South Africa!

For more information click on [30yearsoftikkun](https://30yearsoftikkun.org)



About Afrika Tikkun

Afrika Tikkun is a non-profit organisation celebrating 30 years of providing education, health, and social services to disadvantaged communities within South Africa. There are nine (9) development centres across South Africa's provinces in which Afrika Tikkun's Cradle-to-Career 360-degree model provides a holistic approach to the development of young people. The model starts from early childhood to work readiness when they are ready to access economic opportunities. Currently supporting over 40,000 children and youth across the country, Afrika Tikkun's primary goal is to create a sustainable future through economic and social empowerment for the youth of South Africa, for 30 years and beyond.

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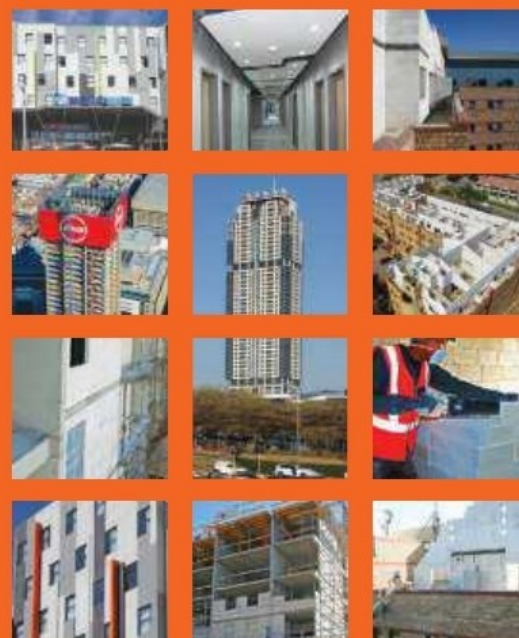
Nutec fibre-cement high performance properties and added benefits include: the use of safe renewable fibres; considerable tensile strength with enhanced dynamic load bearing properties; excellent thermal properties; water-and wind resistance; hail resistance; fire resistance and resistance to fungus, rodents and acid.



➤ Everite Building Products, is an appointed licensee by the Xella Group to manufacturer Hebel Autoclaved Aerated Concrete (AAC). Everite Building Products is the only manufacturer of AAC in Africa.

AAC as a building material has gained a considerable share of the international construction market since its inception in 1923 in Sweden and today maintains its reputation of the building material of the future. It is viewed as a revolutionary material that offers a unique combination of strength, light-weight, thermal insulation, sound absorption, unsurpassed fire resistance and unprecedented ease of construction.

Since commissioning the AAC plant in 2017, Everite Building Products has enjoyed considerable success in specification of the product to landmark projects in South Africa.



WearCheck LUBE TIPS: Volume 5

21. Lube tip: insights into oil additives

By simply including an additive, an inferior base oil cannot be converted into a premium product. It is illogical to use poor-quality oil on a continuing basis, and attempt to overcome its poor lubricating qualities with some special additive. A far better approach is to determine the manufacturer's recommendation as to the minimum API service rating required (API is a standard of quality grade for engine oil made by the American Petroleum Association), and then regularly use a blended lubricant of a higher-service classification than originally recommended, if an improvement in lubrication is the objective. Visit www.wearcheck.co.za for more condition monitoring information.

The result may be an increase in corrosion-related problems. Visit www.wearcheck.co.za for more condition monitoring information.



22. Lube tip: aftermarket oil additives can backfire

Increasing the percentage of a certain additive may improve one property of an oil, while at the same time degrading another. When the specified concentrations of additives become unbalanced, overall oil quality can be affected. Some additives compete with each other for the same space on a metal surface. For example, if a high concentration of an anti-wear agent is added to the oil, the corrosion inhibitor may become less effective.

23. Lube tip: the evolution of oil filtration systems

Early automotive engines didn't use any kind of filtration for the oil. It wasn't until a patent was granted to Ernest Sweetland and George Greenhalgh in 1923 - for their product the "pure oil later" or "Purolator" - that you could buy an automobile with a full-pressure lubrication system. It would be many years later before a full-flow oil filter found on today's vehicles was incorporated. The 1940s would bring about filtration systems on mass produced vehicles, and the 1960s made oil filter changes much more convenient with the advent of "spin on" disposable filters. Through the next few decades, advances were made in the internal construction and filter media, making the filters much more efficient. Today, all automotive engines, whether gasoline or diesel, come with filtration that is designed to improve oil cleanliness and thus extend the life of that engine. Visit www.wearcheck.co.za for more condition monitoring information.



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24. Lube tip: too much of a good thing

More is not always the right approach when it comes to using oil additives. In many instances, blending more additive into the oil, does not result in improved performance. Sometimes, adding more additive actually causes the oil's function to deteriorate. In other cases, while the performance of the additive doesn't improve, the duration of service does, in fact, improve.



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Anglo American Supports Education and Entrepreneurship with Handover of Johannesburg CBD Building to Wits Business School



Anglo American, a global mining company, has made a significant contribution to education and entrepreneurship in South Africa by donating a prominent building in Johannesburg's Central Business District (CBD) to the Wits Business School. This handover underscores Anglo American's commitment to fostering economic growth, innovation, and education in the region.

The Handover

On June 20, 2024, Anglo American officially handed over the building, located on the bustling corner of Main and Simmonds streets, to Wits Business School.



“You can write down your values until your face turns blue, but if you don't live them, they mean nothing. I think the one thing that we did right (with WeThinkCode) is that we recognised from the start how important it was to clearly define what we stand for.

– Arlene Mulder
Social Tech Entrepreneur &
Co-founder of WeThinkCode



The facility, formerly known as Anglo American's Johannesburg headquarters, spans several floors and offers state-of-the-art amenities that will significantly enhance the learning environment for students and entrepreneurs alike.

Significance for Wits Business School

The new building will serve as a dedicated space for Wits Business School's various programs aimed at nurturing future business leaders and innovators. The facility will house classrooms, lecture halls, and collaborative spaces designed to facilitate interaction and idea exchange among students, faculty, and industry professionals.

Dean of Wits Business School, Dr. Maurice Radebe, expressed his gratitude, stating, "This generous donation by Anglo American is a testament to their commitment to education and the development of future leaders. The new facility will provide our students with a conducive learning environment, enabling us to expand our programs and enhance our impact on the business community."

Boosting Entrepreneurship

In addition to benefiting Wits Business School, the building will also support Anglo American's broader objective of fostering entrepreneurship in South Africa.



The facility will host initiatives such as business incubators, startup accelerators, and entrepreneurial workshops. These programs aim to equip aspiring entrepreneurs with the necessary skills, resources, and mentorship to succeed in the competitive business landscape.

Community and Economic Impact

Anglo American's donation is expected to have a ripple effect on the local community and economy. By providing a platform for education and entrepreneurship, the company is helping to create a pipeline of skilled professionals and innovative businesses that will drive economic growth and job creation in the region.



A Commitment to Corporate Social Responsibility

This handover is part of Anglo American's broader commitment to corporate social responsibility (CSR). The company has a long history of investing in community development, education, and sustainable economic initiatives. By supporting institutions like Wits Business School, Anglo American is contributing to the long-term prosperity of South Africa.

Conclusion

Anglo American's handover of its Johannesburg CBD building to Wits Business School is a significant step towards enhancing education and entrepreneurship in South Africa. This generous donation will provide students and entrepreneurs with a world-class facility to learn, innovate, and grow, ultimately contributing to the nation's economic development. As Anglo American continues to invest in such impactful initiatives, the future looks promising for South Africa's business and education sectors.



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MC Mining Secures R20 Million Loan Agreement for Working Capital

MC Mining, a prominent player in the coal mining industry, has announced a significant financial development. The company has entered into a R20-million loan facility with Dendocept, a South Africa-based private company. This loan, equivalent to approximately \$1.1 million, is intended to provide MC Mining with essential

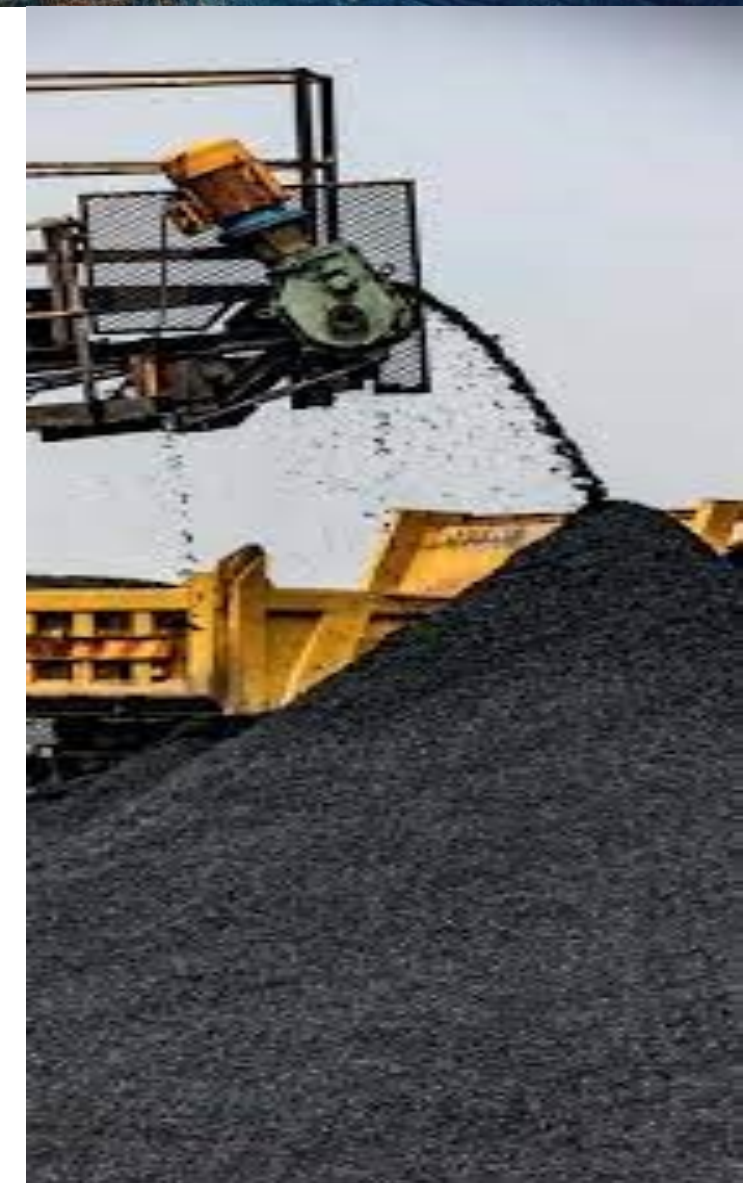
Details of the Agreement

The loan agreement was signed on June 28, 2024, as reported by Marleny Arnoldi. Dendocept, which holds a 6.8% shareholding in MC Mining, has extended this facility to support the company's ongoing operations. The financial injection is expected to enhance MC Mining's liquidity position, ensuring smooth operational activities and supporting its strategic initiatives.



Purpose of the Loan

The primary objective of this loan facility is to bolster MC Mining's working capital. Working capital is crucial for maintaining the day-to-day operations of any company, covering expenses such as payroll, inventory, and other operational costs. For MC Mining, this loan will help stabilize its financial footing amid the volatile market conditions often faced by the coal mining sector.



Company Background

MC Mining is a significant player in South Africa's coal mining industry, focusing on the exploration, development, and mining of high-quality thermal and metallurgical coal. The company's assets include the Makhado Project, the Vele Colliery, and various exploration and development projects. These operations are vital for supplying coal to both domestic and international markets.

Shareholder Confidence

The loan from Dendocept reflects a vote of confidence from a key shareholder in the long-term prospects of MC Mining. By providing this financial support, Dendocept demonstrates its commitment to the company's future growth and stability. Such backing is particularly important in the mining sector, where access to reliable funding can significantly impact operational success.

Economic Context

The coal mining industry in South Africa is navigating a complex landscape, characterized by regulatory challenges, fluctuating coal prices, and environmental concerns. Financial stability and access to capital are critical for companies like MC Mining to continue their operations and contribute to the country's energy supply and economic development. The coal mining industry, support from shareholders like Dendocept will be crucial in driving its success and sustainability.



Conclusion

The R20-million loan agreement between MC Mining and Dendocept is a strategic move that underscores the importance of financial agility in the mining sector. This infusion of working capital will enable MC Mining to maintain its operational momentum and pursue its strategic goals. As the company continues to navigate the challenges



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Enhancing Safety in Mining: A Focus on East, Central, and Southern Africa



The 3 Main Hazards in the Mining Industry

- **Coal Burst** causing the sudden collapse of mine walls
- **Fires and Explosions** caused by mixing gasses and heat from equipment in confined spaces
- **Mine Dust** causing debilitating disease and possible fatalities

Mining is a cornerstone of the economies in East, Central, and Southern Africa. The region is rich in mineral resources, including gold, diamonds, copper, and coal, among others. However, the mining industry is fraught with inherent risks, making safety a paramount concern. This article delves into the current state of mining safety in these regions, highlighting challenges and advancements, and offering insights into best practices for ensuring the well-being of miners.

Current Safety Landscape

In East, Central, and Southern Africa, mining operations range from large-scale industrial activities to small-scale artisanal mining. Each type presents unique safety challenges:

1. **Industrial Mining:** Large-scale operations often have better access to modern safety equipment and training but face issues related to deep underground mining, machinery malfunctions, and chemical hazards.
2. **Artisanal Mining:** Small-scale mining is typically less regulated and poses significant safety risks due to the lack of proper equipment, training, and safety protocols.

Common Safety Hazards

Several safety hazards are prevalent in mining across these regions:

- **Cave-ins and Landslides:** These are particularly common in artisanal mining due to poorly supported tunnels and pits.
- **Equipment Malfunctions:** Both industrial and artisanal miners are at risk from machinery accidents.
- **Chemical Exposure:** The use of chemicals such as mercury in gold mining can lead to severe health problems.
- **Dust and Particulate Matter:** Long-term exposure can cause respiratory issues and other health problems.



Advancements in Safety

Efforts to improve mining safety in East, Central, and Southern Africa have seen some significant advancements:

- 1. **Regulatory Frameworks:** Governments are increasingly implementing and enforcing stricter safety regulations. For example, South Africa has stringent mining safety laws that have helped reduce fatalities.
- 2. **Technological Innovations:** The adoption of new technologies, such as automated machinery, real-time monitoring systems, and advanced personal protective equipment (PPE), has significantly enhanced safety.
- 3. **Training and Education:** Comprehensive training programs are being established to educate miners about safety protocols and emergency response procedures. These programs often include simulations and practical exercises.
- 4. **Community and NGO Involvement:** Various non-governmental organizations and community groups are playing a crucial role in promoting safety awareness and providing necessary resources to miners.



Subsidence
Underground Longwall Mining - Shearing



Case Studies

1. South Africa: Automated Safety Monitoring

In South Africa, large mining companies are increasingly adopting automated safety monitoring systems. These systems use sensors and IoT devices to monitor conditions in real-time, such as gas levels, ground stability, and equipment performance. In case of any anomalies, the system alerts the operators, allowing for immediate action to prevent accidents.

2. Zambia: Community-Based Safety Initiatives

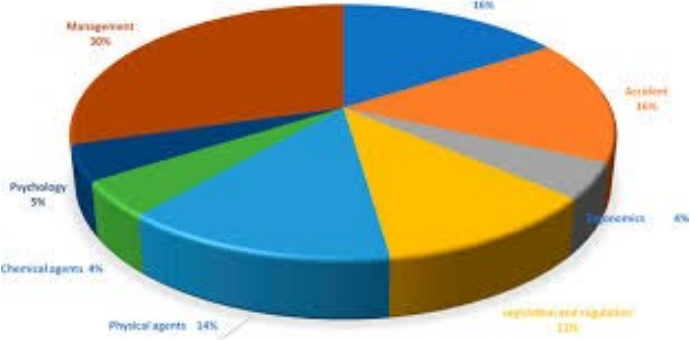
In Zambia, community-based initiatives are making a significant impact on artisanal mining safety. Local NGOs have partnered with international organizations to provide safety training and distribute PPE to small-scale miners. These initiatives have led to a noticeable reduction in accidents and health issues.



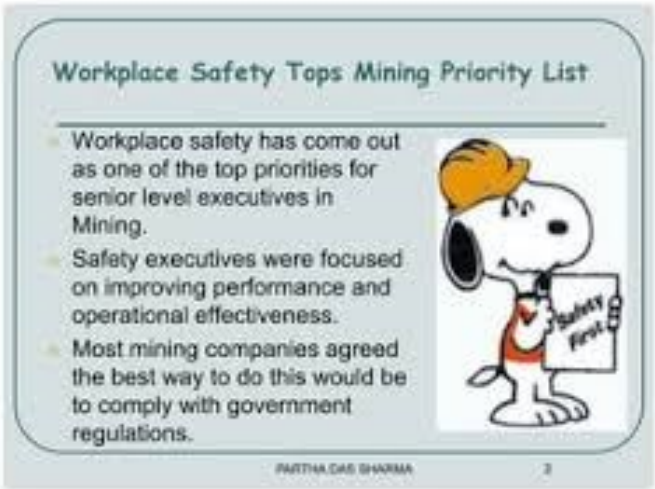
Best Practices for Enhancing Safety

To further improve mining safety in East, Central, and Southern Africa, the following best practices are recommended:

- 1. **Regular Safety Audits:** Conduct regular safety audits to identify and mitigate potential hazards.
- 2. **Continuous Training:** Implement ongoing training programs to keep miners updated on the latest safety protocols and technologies.



- 1. **Investment in Technology:** Invest in modern safety equipment and technology to monitor and control mining environments.
- 2. **Community Engagement:** Engage with local communities to raise awareness about mining safety and involve them in safety initiatives.
- 3.
- 4. **Enforcement of Regulations:** Ensure strict enforcement of safety regulations by government authorities to maintain high safety standards.



Conclusion

Safety in mining is a multifaceted challenge that requires the collaboration of governments, mining companies, communities, and NGOs. By adopting best practices, leveraging technological advancements, and fostering a culture of safety, East, Central, and Southern Africa can significantly reduce mining-related accidents and ensure the well-being of those working in this vital industry.



- 1890** Mining Operations Act establishes rules for ventilation, blasting, manholes, lifting devices, shaft signals, brake machinery, and boilers
- 1914** Workmen's Compensation Act provides for compensation and rehabilitation to injured workers
- 1920** Ontario Mining Association established
- 1929** Ontario Mine Rescue created under the Department of Mines
- 1930** Mines Accident Prevention Association of Ontario created (now Workplace Safety North)
- 1976** Royal Commission publishes the Ham Report, which introduces the Internal Responsibility System
- 1978** Ontario Occupational Health and Safety Act
- 1979** Mandatory specialized training
- 1982** Burkett Commission report on mine safety leads to a governance model for incident investigations
- 1985** Stevenson Commission on mine safety results in improved training and communication
- 1988** Workplace Hazardous Materials Information System (WHMIS) established
- 2012** Battery electric vehicle technology begins to be used in underground mining operations
- 2014** Risk assessment of underground mining sector
- 2015** Mining Health, Safety and Prevention Review
- 2017** Ontario Regulation 854 requires risk assessments
- Industry experts carry out underground and surface risk assessments and root causes analyses to recognize, assess, and control top hazards
- TODAY** Mining in Ontario is a multi-billion dollar industry known around the world for its safety and environmental leadership, diversity, productivity, and innovation
- TOMORROW** Creating the next generation of integrated predictive safety systems to improve health and safety outcomes

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