

VISION AI FOR INDUSTRIAL INTEGRITY



**NEXT-GENERATION ASSET INTEGRITY MANAGEMENT
THROUGH VISION AI**

www.dgc-africa.com

TRANSFORMING VISUAL DATA INTO OPERATIONAL EXCELLENCE

In the rapidly evolving landscape of industrial operations across sub-Saharan Africa, a revolutionary transformation is taking place. **DGC AFRICA**, building upon more than a century of trusted industrial service, has embarked on a groundbreaking journey that bridges traditional industrial expertise with cutting-edge artificial intelligence technologies.



This transformation represents not merely an upgrade to existing services, but a fundamental re-imagining of how industrial operations can achieve unprecedented levels of efficiency, safety, and profitability.

As a proud member of the Dickinson Group of Companies, **DGC AFRICA** combines 115 years of industrial heritage with cutting-edge technology partnerships to deliver comprehensive Asset Integrity Management and Industrial Solutions across sub-Saharan Africa. Our Vision AI capabilities represent the latest evolution in our commitment to operational excellence, safety, and sustainable growth.

From our roots as a traditional industrial services provider to our current position as a technology-enabled solutions leader, **DGC AFRICA** continues to evolve while maintaining the fundamental values of integrity, innovation, and customer success that have defined our organization for over a century.

**OUR VISION AI PLATFORM REPRESENTS NOT JUST TECHNOLOGICAL ADVANCEMENT,
BUT THE NATURAL PROGRESSION OF OUR MISSION
TO PROVIDE AFRICAN INDUSTRIES
WITH WORLD-CLASS CAPABILITIES THAT DRIVE SUSTAINABLE
COMPETITIVE ADVANTAGE**

DGC AFRICA's Vision AI solutions deliver measurable operational excellence, achieving 3-5% yield improvements, 10% reduction in equipment downtime, and 3% energy cost reductions while maintaining our 115-year commitment to industrial excellence across sub-Saharan Africa.

OUR FOUNDATION

WHERE EXPERIENCE MEETS INNOVATION
THE DICKINSON GROUP LEGACY

The story of DGC AFRICA begins in 1910, when the Dickinson Group of Companies was founded with a simple yet powerful vision: to provide industrial operations with the highest quality services and solutions available. Over the past 115 years, this commitment has evolved from serving local markets to establishing a global presence, yet the core values that guide our operations remain unchanged.

Today, the Dickinson Group of Companies stands as a global leader in Asset Integrity Management and Industrial Solutions, with expertise spanning diverse industries including mining, metals smelting, mineral processing, and more across continents. We have consistently prioritized innovation, quality, and sustainability in all our endeavours, ensuring operational excellence and client satisfaction across every project we undertake.

DGC AFRICA: BRIDGING EXCELLENCE IN SUB-SAHARAN AFRICA

As the dedicated sub-Saharan African division of this prestigious group, DGC AFRICA focuses exclusively on serving the dynamic markets of this region.

**OUR MISSION IS CLEAR & UNWAVERING:
TO FACILITATE OPERATIONAL EXCELLENCE, PROFITABILITY,
& SUSTAINABLE GROWTH FOR OUR CLIENTS
THROUGH A COMPREHENSIVE SUITE OF HIGH-QUALITY
INNOVATIVE, & COST-EFFECTIVE
ASSET INTEGRITY MANAGEMENT & INDUSTRIAL SOLUTIONS THAT ENHANCE
RELIABILITY, EFFICIENCY, & SAFETY ACROSS INDUSTRIES**



THE VISION AI REVOLUTION

TRANSFORMING INDUSTRIAL OPERATIONS

UNDERSTANDING THE UNTAPPED POTENTIAL

In today's industrial landscape, a remarkable paradox exists that represents one of the greatest untapped opportunities for operational improvement. While modern industrial facilities are equipped with hundreds, sometimes thousands, of cameras deployed across manufacturing and processing operations, less than 1% of the captured visual data is actually analysed. This staggering statistic reveals a massive blind spot in industrial operations worldwide.

The challenge facing modern industrial operations is not a lack of visual data, it's the fundamental inability to process and act on that data in real-time. Traditional monitoring approaches rely heavily on human observation, which is inherently limited by attention span, shift patterns, and the physical impossibility of simultaneously monitoring hundreds of camera feeds across complex industrial environments. Human operators, regardless of their skill and dedication, can only focus on a small fraction of the available visual information at any given time.



This limitation has profound implications for operational efficiency, safety, and profitability. Critical equipment anomalies go unnoticed until they become failures. Process variations that could be corrected immediately are allowed to compound over time. Safety hazards develop undetected until they pose serious risks to personnel and operations. The cumulative effect of these limitations represents billions of dollars in lost productivity, increased maintenance costs, and missed optimization opportunities across global industrial operations.

DGC AFRICA'S VISION AI TRANSFORMATION

DGC AFRICA's Vision AI solutions fundamentally transform this landscape by introducing intelligent systems that never tire, never lose focus, and never miss critical details. Our advanced artificial intelligence platforms analyse hundreds of cameras continuously, 24 hours a day, 7 days a week, with precision levels that consistently exceed 95% accuracy.

But this transformation goes far beyond simple monitoring. Our Vision AI systems identify trends and patterns that are completely invisible to human observation, detecting subtle changes in equipment condition, process parameters, and material quality that would otherwise go unnoticed until they manifest as costly problems. These systems can control machines through intelligent automation, responding to detected conditions faster than any human operator could react.



Perhaps most importantly, our Vision AI solutions prepare comprehensive reports and insights that provide unprecedented visibility into operational performance, while intelligently filtering alerts to ensure that operators are only notified of genuine anomalies requiring human intervention. This approach eliminates alert fatigue while ensuring that critical issues receive immediate attention.

The transformation enables industrial operations to shift from reactive maintenance and crisis management to predictive, data-driven operational excellence that maximizes efficiency while minimizing risk. This represents nothing less than a paradigm shift in how industrial operations can be managed and optimized.

PROVEN BUSINESS IMPACT

QUANTIFIED RESULTS ACROSS GLOBAL DEPLOYMENTS

FINANCIAL IMPACT THAT MATTERS

The true measure of any technological innovation lies not in its sophistication, but in its ability to deliver measurable business results. **DGC AFRICA's Vision AI solutions** have consistently demonstrated substantial improvements that directly impact operational profitability and efficiency. These results are not theoretical projections or marketing promises, they are based on proven Vision AI deployments across industrial operations worldwide.

DOCUMENTED FINANCIAL IMPACT

- **Over \$15 million in cost savings** delivered across deployments in the last year alone.
- **More than 5,000 hours of equipment downtime avoided** annually through predictive interventions.
- **3-5% improvement in production yields** consistently achieved across diverse industries.
- **10% reduction in equipment downtime** through intelligent predictive maintenance strategies.
- **Significant extension of asset lifecycles** through early intervention and optimized maintenance scheduling.
- **3% reduction in energy costs** achieved through intelligent monitoring and process control optimization.



OPERATIONAL EXCELLENCE BENCHMARKS

The precision and reliability of DGC AFRICA's Vision AI solutions consistently outperform traditional monitoring approaches across multiple critical metrics:

PERFORMANCE ACHIEVEMENTS

- **95%+ precision in visual anomaly detection**, setting new industry standards for accuracy.
- **10x more anomalies detected** compared to manual inspection methods.
- **Zero false alerts** achieved through advanced AI algorithms and machine learning optimization.
- **Dramatically reduced response times** enabling faster corrective actions.
- **Minimum 1:5 return on investment** achieved across all deployments within the first year.

These results demonstrate conclusively that Vision AI is not merely a technological upgrade, it represents a fundamental transformation of how industrial operations can achieve unprecedented levels of efficiency, safety, and profitability.

The consistency of these improvements across diverse industrial environments and applications validates the robustness and reliability of our Vision AI platform.

COMPREHENSIVE VISION AI SOLUTIONS PORTFOLIO

MATERIAL MONITORING FOR NET ZERO GOALS

In an era where sustainability and environmental responsibility have become critical business imperatives, industrial operations increasingly require precise material monitoring to achieve both operational efficiency and environmental compliance targets.

DGC AFRICA's material monitoring solutions provide continuous, real-time analysis that optimizes resource utilization while supporting comprehensive environmental compliance initiatives.

Our advanced AI algorithms continuously monitor and analyse material streams with unprecedented precision, identifying opportunities for waste reduction and process optimization that directly contribute to sustainability goals.

THIS INTELLIGENT MONITORING EXTENDS BEYOND SIMPLE DETECTION TO PROVIDE ACTIONABLE INSIGHTS THAT ENABLE OPERATIONS TEAMS TO MAKE INFORMED DECISIONS ABOUT RESOURCE ALLOCATION & PROCESS ADJUSTMENTS

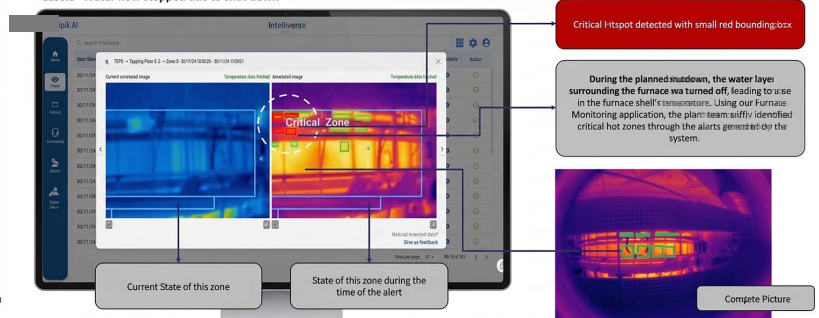
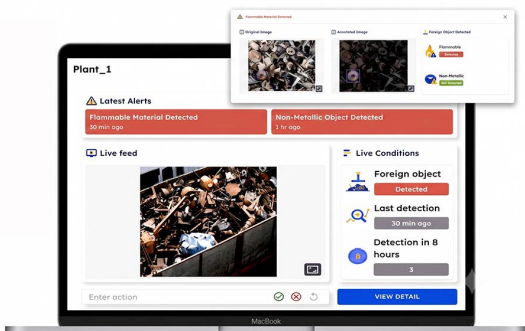
ADVANCED MATERIAL MONITORING CAPABILITIES

- **Foreign Object Detection:** Our sophisticated AI systems provide advanced identification of unwanted materials and debris, preventing equipment damage and ensuring product quality consistency
- **Particle Size Analysis:** Real-time granulometry and particle sizing capabilities through our proprietary SizeSense technology enable continuous process optimization and quality control
- **Moisture Monitoring:** Infrared-based moisture detection systems ensure optimal material control and energy efficiency throughout the production process
- **Quality Control:** Comprehensive fines and undersized particle detection prevents process inefficiencies and waste, contributing to both operational excellence and environmental stewardship.



Root Cause Analysis Conducted by Plant Team for Identified Hotspot (2/3)

Case:3 Water flow stopped due to shut down



EQUIPMENT MONITORING FOR ZERO DOWNTIME

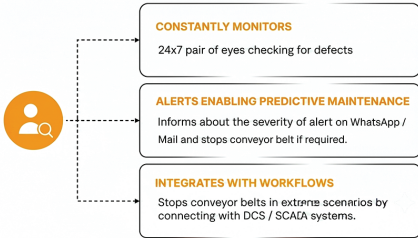
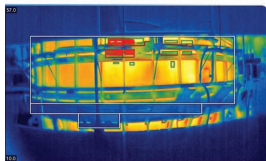
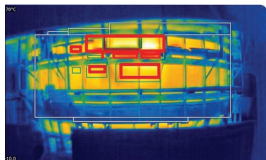
Equipment failures represent one of the most costly and disruptive challenges facing industrial facilities worldwide. Unplanned downtime can cost operations millions of dollars while creating cascading effects throughout the entire production system. **DGC AFRICA's** predictive monitoring solutions transform maintenance strategies from reactive crisis management to proactive, intelligence-driven interventions.

OUR VISION AI SYSTEMS CONTINUOUSLY MONITOR CRITICAL EQUIPMENT THROUGH ADVANCED COMPUTER VISION TECHNOLOGIES, ENABLING MAINTENANCE TEAMS TO IDENTIFY POTENTIAL ISSUES LONG BEFORE THEY DEVELOP INTO FAILURES.

This predictive capability allows for maintenance interventions to be scheduled during planned downtime, dramatically reducing both maintenance costs and production disruptions.

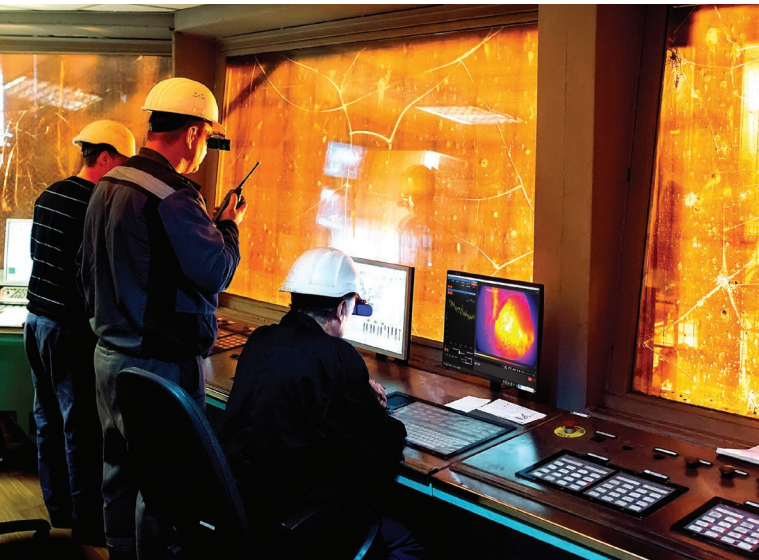
FEATURED EQUIPMENT MONITORING SOLUTIONS

- BeltMind:** Advanced conveyor health monitoring system providing predictive maintenance capabilities with progressive defect tracking that monitors crack development over time.
- ThermoSight:** Comprehensive hot spot identification and thermal profiling system designed specifically for furnace refractory monitoring and energy optimization.
- Kiln Monitoring:** Real-time kiln health assessment system that prevents costly failures while optimizing energy consumption and extending equipment life.
- Switchyard Monitoring:** Specialized electrical equipment thermal monitoring ensuring both safety compliance and operational reliability.



Impact

- 50%** **Reduction in Downtime**
 By detecting hotspots early, the solution reduces unplanned downtime, preventing up to 30 days of production loss due to complete refractory failure.
- 5 Cr** **Cost Savings on Maintenance**
 Continuous monitoring reduces the need for costly maintenance, saving approximately ~ 5 Cr in potential repair expenses.
- 4 Cr** **Prevention of Production Loss**
 The solution helps avoid a loss of 4,200 tons of production, which translates to a savings of ~ 4 Cr, ensuring consistent output and financial stability.



PROCESS MONITORING FOR ZERO INCIDENTS

Safety and process integrity remain paramount concerns across all industrial operations. A single safety incident can have devastating consequences for personnel, equipment, and business continuity. DGC AFRICA's process monitoring solutions provide continuous, intelligent surveillance that prevents incidents while simultaneously optimizing operational parameters for maximum efficiency.

Our AI-powered systems create a comprehensive safety net that protects both personnel and equipment while maintaining optimal production parameters.

THESE SYSTEMS LEARN FROM OPERATIONAL PATTERNS & CAN IDENTIFY POTENTIAL SAFETY HAZARDS OR PROCESS DEVIATIONS BEFORE THEY DEVELOP INTO SERIOUS PROBLEMS



CORE PROCESS MONITORING APPLICATIONS

- **JamGuard:** Intelligent big rock and unwanted object detection system that prevents equipment damage and production disruption before materials can cause harm.
- **Blending Optimization:** Real-time process control ensuring consistent material mixing and quality while optimizing resource utilization.
- **Casting Monitoring:** Advanced quality control during metal casting operations, reducing defects and waste while ensuring consistent product quality.
- **Dispatch Control:** Automated logistics and material flow optimization system that improves throughput while reducing operational costs.



UNDERSTANDING VISION AI AGENTS

THE NEXT EVOLUTION IN INDUSTRIAL INTELLIGENCE

DGC AFRICA's **Vision AI Agents** represent a fundamental leap forward from traditional monitoring technologies. These intelligent systems don't simply detect anomalies and alert operators, they reason about what they observe, orchestrate multiple workflows simultaneously, and take autonomous action based on their analysis of visual data.

Unlike conventional monitoring systems that operate on predefined rules and thresholds, Vision AI Agents continuously learn from operational patterns, adapt to changing conditions, and make intelligent decisions about when and how to intervene. This learning capability means that the systems become more effective over time, developing an increasingly sophisticated understanding of normal operational parameters and potential deviation patterns.



EACH VISION AI AGENT IS DESIGNED TO FUNCTION AS A SPECIALIZED EXPERT, FOCUSING ON SPECIFIC ASPECTS OF INDUSTRIAL OPERATIONS WHILE MAINTAINING SEAMLESS INTEGRATION WITH BROADER OPERATIONAL SYSTEMS

This approach ensures that every critical aspect of operations receives dedicated, expert-level monitoring while maintaining coherent, coordinated responses across all systems.

CORE CAPABILITIES OF VISION AI AGENTS

INTELLIGENT ANALYSIS & RESPONSE

- **Advanced Anomaly Detection:** Continuous 24x7 visual monitoring with precision levels consistently exceeding 95% accuracy.
- **Pattern Analysis:** Sophisticated insight generation from visual data that identifies trends invisible to human observation.

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- **Conversational Interface:** Natural language query capabilities allowing operators to ask questions about operational status in plain English.
- **Automated Workflows:** Intelligent routing and communication through email, WhatsApp, SMS, and other channels.
- **Machine Control Integration:** Direct integration with control systems enabling immediate automated responses to detected conditions.

TRANSFORMATIONAL OPERATIONAL BENEFITS

- **Enhanced Detection Capability:** Catch 10x more anomalies than traditional manual inspection methods.
- **Elimination of False Alerts:** Advanced AI algorithms ensure zero false alerts, eliminating operator fatigue and ensuring critical issues receive appropriate attention.
- **Accelerated Response Times:** Dramatically reduced time between problem detection and corrective action.
- **Optimized Process Control:** Enable more precise and responsive process control based on real-time visual analysis.
- **Continuous Monitoring:** Provide 24x7 monitoring capabilities without human fatigue or attention limitations.



CASE STUDY

REAL-WORLD SUCCESS | BELTMIND PROGRESSIVE MONITORING CASE STUDY

THE INDUSTRIAL CHALLENGE

A major mining operation was experiencing a costly pattern of recurring conveyor belt failures that caused significant unplanned downtime and emergency maintenance costs. These failures were impacting operational profitability and creating safety concerns for maintenance personnel who had to respond to emergency repairs under challenging conditions.

Traditional inspection methods were proving inadequate for early problem identification. Manual visual inspections, conducted during scheduled maintenance windows, were failing to detect developing problems early enough to prevent catastrophic failures. The operation needed a solution that could provide continuous monitoring and early warning of developing belt issues.

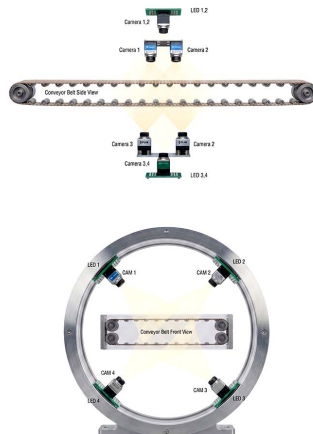
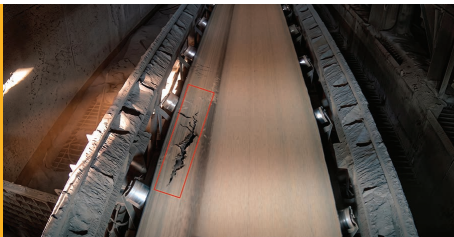
THE DGC AFRICA SOLUTION

DGC AFRICA implemented our BeltMind Vision AI agent to provide continuous conveyor monitoring capabilities. This advanced system was designed to offer 24/7 surveillance of critical conveyor systems with intelligent defect detection and progression tracking capabilities that could identify problems at their earliest stages and monitor their development over time. The BeltMind system was configured to detect various types of belt damage, from minor surface scratches to significant structural defects, while tracking the progression of any identified issues over time.

THIS PROGRESSIVE MONITORING CAPABILITY WAS CRUCIAL FOR ENABLING PREDICTIVE MAINTENANCE STRATEGIES.

5 APRIL: PROGRESSIVE MONITORING

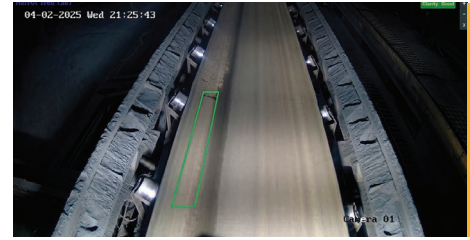
The system's progressive tracking capabilities identified that the crack size had increased with visible expansion over the three-day period. A medium severity defect alert was raised, accompanied by a progressive trend alert indicating accelerating deterioration that required attention from the maintenance team.



TIMELINE OF SUCCESS

2 APRIL: INITIAL DETECTION

The BeltMind system detected minor scratch marks with slight abrasion on the conveyor belt surface. A low severity alert was automatically generated and transmitted to the maintenance team. At this stage, the damage was minimal and would have been completely missed during routine visual inspections due to its subtle nature.



8 APRIL: CRITICAL INTERVENTION

The same crack had converted to high severe damage, triggering a high severity alert that enabled the plant team to schedule and complete necessary repairs during planned downtime. Without this early warning system, this damage would have continued to progress until catastrophic failure occurred during operation.



MEASURABLE OUTCOMES

OPERATIONAL IMPACT

- **Prevented major equipment failure** that would have resulted in extended unplanned downtime and emergency repair costs.
- **Enabled predictive maintenance scheduling** based on actual equipment condition rather than arbitrary time-based intervals.
- **Avoided significant production losses** through proactive intervention during planned downtime.
- **Delivered return on investment within weeks** of implementation through avoided downtime costs and optimized maintenance resource allocation.

THIS CASE STUDY DEMONSTRATES THE TRANSFORMATIONAL IMPACT OF VISION AI ON MAINTENANCE OPERATIONS, enabling the shift from reactive crisis management to proactive, data-driven maintenance strategies that optimize both equipment performance and maintenance costs.

THE FUTURE OF INDUSTRIAL INTEGRITY STARTS TODAY

TRANSFORM YOUR OPERATIONS WITH VISION AI EXCELLENCE

The industrial landscape of sub-Saharan Africa stands at a pivotal moment of transformation.

Organizations that embrace the power of Vision AI technology today will establish competitive advantages that extend far beyond immediate operational improvements.

DGC AFRICA'S UNIQUE COMBINATION OF 115 YEARS OF INDUSTRIAL EXPERTISE & CUTTING-EDGE ARTIFICIAL INTELLIGENCE CAPABILITIES PROVIDES THE FOUNDATION FOR THIS TRANSFORMATION

Vision AI is helping industrial operations across mining, mineral processing, smelting, cement, and power generation improve visibility, reliability, safety, and operational performance through continuous monitoring and intelligent analysis.



APPLICATIONS ACROSS INDUSTRY

✓ MINING & MINERAL PROCESSING

- **Conveyor health** monitoring and predictive maintenance
- **Ore sizing**, classification, and quality control
- **Foreign object** and obstruction detection
- **Material flow** optimization and process monitoring

✓ SMELTING & FURNACE OPERATIONS

- **Refractory hot spot** detection and thermal monitoring
- **Furnace condition** assessment and integrity monitoring
- **Process stability** monitoring and anomaly detection
- **Energy** optimization through intelligent thermal analysis

✓ CEMENT & AGGREGATES

- **Kiln** monitoring and thermal profiling
- **Material** sizing and moisture analysis
- **Quality** control and foreign object detection
- **Process** optimization and operational efficiency improvements

✓ POWER & UTILITIES

- **Switchyard** and electrical equipment monitoring
- **Thermal anomaly** detection
- **Asset condition** monitoring and predictive maintenance
- **Safety** and compliance monitoring

✓ **OUR VISION AI SOLUTIONS ENABLE INDUSTRIAL OPERATIONS TO:**

- **Detect anomalies** before they become failures
- **Reduce unplanned downtime** and maintenance costs
- **Improve operational efficiency** and productivity
- **Enhance safety** and process compliance
- **Deliver real-time visibility** across critical assets and operations

READY TO BEGIN YOUR VISION AI JOURNEY?

Contact **DGC AFRICA** today to schedule your personalized consultation and discover how **Vision AI** can fundamentally transform your industrial operations. Our experienced team stands ready to assess your specific requirements and develop a customized implementation strategy that delivers measurable results from day one.



TRANSFORM YOUR INDUSTRIAL OPERATIONS
WITH VISION AI FOR INDUSTRIAL INTEGRITY.
WHERE 115 YEARS
OF AFRICAN INDUSTRIAL EXPERTISE
MEETS CUTTING-EDGE
ARTIFICIAL INTELLIGENCE

Over a Century of Trusted Service — Committed to Safety, Quality and On-Time Delivery



OUR OFFICES

CONTACT US to learn how DGC can help transform your operations and deliver sustainable competitive advantage.

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OVER A CENTURY OF SERVICE. A FUTURE BUILT ON ENGINEERED RESILIENCE.



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