



ENGINEERED EXCELLENCE

ROBUST

SEPTEMBER 2017

MURRAY & ROBERTS GROUP MAGAZINE

A BRIGHT FUTURE AHEAD

FEATURE

Defining the 'reshaped' Murray & Roberts in the context of our *New Strategic Future*

INNOVATION

Cementation Canada debuts Injection Hoisting technology at #DisruptMining

ROBUST Q & A

Get to know Sally Downing and Clive Govender

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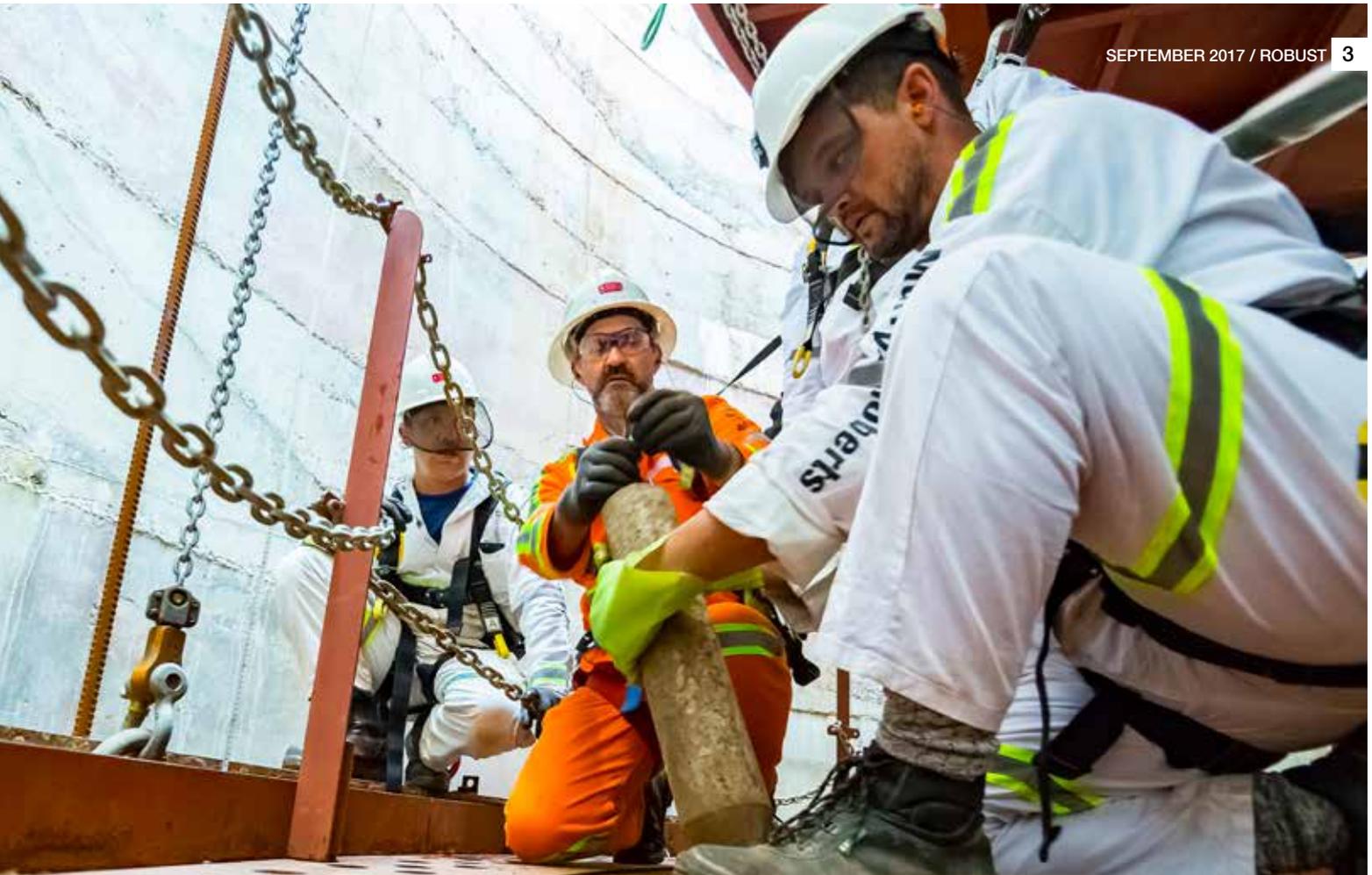
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HENRY LAAS
GROUP CHIEF EXECUTIVE

The new financial year to June 2018 will mark the first year as a fundamentally reshaped Murray & Roberts, with a renewed focus on value creation and delivering *Engineered Excellence* in everything that we do.

The road we have travelled over the past few years has been a challenging one, but Murray & Roberts is a resilient organisation that emerged strongly and with a promising outlook. The feature article in this edition is about the “reshaped” Murray & Roberts Group in the context of our *New Strategic Future* and I discuss who we are today, especially after being known as a civil and building contractor for more than a century.

We secure and deliver projects globally and the reports from our three business platforms once again exhibit the Group’s multinational capability. Recently, RUC Cementation Mining (part of the Underground Mining platform) secured their largest contract to date with Dacian Gold Limited in Australia and Murray & Roberts Power & Energy (part of the Power & Water platform) successfully delivered a marine gas storage facility for the Ghana Oil Company in Takoradi, Ghana. Clough AMEC (part of the Oil & Gas platform) has also been awarded a maintenance services contract with Yara International ASA.

I enjoyed hosting our first Town Hall Talk earlier this year, where employees had an opportunity to speak with me on various Group issues, and we will continue to provide similar opportunities into the future. Another employee engagement initiative was the first of our quarterly breakfasts hosted by Daniël Grobler and myself. At this breakfast, we hosted five employees and the concept of *Engineered Excellence* was the main discussion point. We concluded that whatever the task at hand, whether we are developing our people, or delivering our projects, it should always be ‘Engineered’ to achieve an outcome of ‘Excellence’.

Finally, I want to make use of this opportunity to extend my appreciation to Mahlape Sello, who retires as Murray & Roberts’ chairman at the annual general meeting later this year. Mahlape, thank you for your support in pursuing our *New Strategic Future*. Suresh Kana will succeed Mahlape as chairman, and I would also like to welcome Suresh in his new role.

Enjoy this edition of Robust.

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FEATURE

Defining the 'reshaped' Murray & Roberts in the context of our *New Strategic Future*

The outcome of the implementation of the *New Strategic Future*, which the Board approved in 2014, has been a significant change in Murray & Roberts, from a predominantly South African civil and building contractor, to a multinational engineering and construction Group focused on the natural resources market sectors.

The strategy was designed with two phases in mind:

- **optimise** the Group's portfolio of **businesses**; and
- **position** the Group for **sustainable growth** and **value creation**, based on the positive long-term demand drivers for natural resources.

These drivers include:

- global population growth;
- global economic growth; and
- ever increasing urbanisation.

Other factors are becoming more and more relevant, such as environmental concerns that are stimulating investment in water security and cleaner energy sources such as gas and renewables.

SO WHO, OR WHAT ARE WE TODAY – ESPECIALLY AFTER BEING KNOWN AS A CIVIL AND BUILDING CONTRACTOR FOR MORE THAN A CENTURY?

Today, Murray & Roberts is a **multinational engineering and construction group**, with a focused portfolio of businesses in the **natural resources market sectors of metals & minerals, oil & gas, and power & water**.

The significant reshaping of the organisation is the most evident feature of the progress we have made over the past six years to change the strategic direction and reposition the Group for sustainable growth and profitability.



To be a specialist contractor in our chosen market sectors requires our business platforms to have a permanent presence in the geographies with the most compelling growth potential for our clients, along with the ability to support them in other territories. It also requires that our service offerings provide coverage of clients' requirements across the full project life cycle. This provides diversification benefits both in relation to geographic risk and the spread of volume and margins across the segments or phases of the project life cycle.

Our organic and acquisitive growth plans are therefore focused on positioning our businesses in key growth markets, specifically developed markets that present lower socio-political and regulatory risks, and higher-margin segments of the project life cycle.

In tandem with the implementation of the Group strategy, concerted effort to resolve claims on legacy projects has continued. The significant uncertified revenue historically carried on our balance sheet, associated with these claims, created investor uncertainty and placed a drag on the Group's market value. We are working steadily to remove this detraction, both in terms of the call on management's time and the cost of lengthy legal proceedings.

DELIVERING ENGINEERED EXCELLENCE

Engineered Excellence is not negotiable! Adopting this mantra means we carefully plan and always deliver on our promises to achieve excellence in all that we do, irrespective if you are on one of our many project sites across the world, or in an office – we have to strengthen our focus on improving our performance every year.

While the excellence we strive for in every aspect of the business is fundamental to our competitiveness and reputation, it also supports the quality of the Group's earnings, and ultimately investment returns.



Two major indicators of the progress we have made in *Engineered Excellence*, specifically in the quality of risk management and project delivery, are the Group's safety performance and the reduction in number of loss-making projects.

The significant improvement in the safety performance of our business platforms is a key competitive advantage and underpins their efforts to be recognised as employers of choice in their markets. The Group has introduced and embedded several key initiatives, including a focus on lead indicators and improved incident reporting and analysis. The Group-wide implementation over the last year of the Major Accident Prevention ("MAP") programme, which empowers supervisors and the workforce to plan and take ownership of safety outcomes, has delivered excellent results and supported a record-low LTIFR for the Group.

In relation to loss-making projects, the improvement trend has been equally laudable. The number of loss-making projects has reduced over the past five years from more than 10, to only one in the year under review. This is a significant achievement considering the Group's current volume of projects globally.

This improvement is a good indicator of the quality of management within the business platforms, and the frameworks the Group has put in place to govern and assure operational excellence. The Group's risk tolerance is well defined and it has implemented specific parameters for risk and opportunity management at tender stage, contracting principles (which include a register of lessons learnt across the platforms), as well as clear limits of authority.

That the governance framework for operational excellence is entrenched and working well is especially gratifying given the pressure on our business platforms to accept often onerous commercial demands from clients in tough economic and highly competitive environments.

A RESOLUTE FOCUS ON GROWTH AND VALUE CREATION

With the extensive progress made in de-risking the Group, clarifying the business model and strategy, and devolving greater strategic responsibility to platform leadership to deliver on their medium-term business plans, the focus has shifted to optimising the Group's businesses and growing shareholder value.

Operationally, each of the platforms are at different stages in their strategic development, with clear plans to deepen their specialist service offerings and achieve their growth aspirations through geographic and project life cycle diversification in their respective natural resources market sectors.

The Group's strong statement of financial position and improving performance expectations places it well to fund its organic and acquisitive growth plans.

CONCLUSION AND APPRECIATION

Our strategy continues to evolve, but the financial year to June 2018 will essentially be the first year as a fundamentally reshaped Murray & Roberts, with a resolute focus on value creation.

We have travelled a long and challenging road the past few years as we had to deal with a prolonged weakness in the commodity cycle, but we have proven time and again that we are a resilient organisation.

I want to thank each and every one of our employees for all your hard work over the past financial year, for continuing to live our values and your contribution in pursuit of *Engineered Excellence* and our *New Strategic Future*. **R**

PEOPLE

Robust gets to know Sally Downing and Clive Govender



WHAT CAREER MILESTONES ARE YOU MOST PROUD OF HAVING ACHIEVED?

It was a wonderful achievement to be appointed as Commercial Executive of Murray & Roberts Cementation and to then lead and develop the department into a highly successful, efficient and skilled team.

This team has become highly respected in the industry amongst clients (both internal and external) and counterparties alike and adds true and tangible value to the business.

WHAT ARE SOME OF THE CHALLENGES YOU FACE IN YOUR CURRENT ROLE?

In the current climate, in which tendering for and winning jobs is challenging, we are faced with a constant balancing act to align commercial risk taking with commercial risk mitigation.

Murray & Roberts Cementation is also concentrating on opportunities outside of the borders of South Africa that bring their own commercial and legal challenges!

WHAT EXCITES YOU ABOUT THE FUTURE IN YOUR INDUSTRY?

I think Murray & Roberts Cementation is particularly well placed to win work and to take full advantage of opportunities, even more so when the industry starts to climb out of the current downturn.

WHAT ARE SOME OF YOUR INTERESTS OUTSIDE OF THE OFFICE?

I have a young family and love to spend time with them over the weekends – rushing around from sporting events to birthday parties. I love to travel and in my spare time I read and play guitar.

WHAT IS THE BEST PIECE OF CAREER ADVICE YOU'VE RECEIVED?

No one will do it for you.

WHAT WOULD PEOPLE BE SURPRISED TO KNOW ABOUT YOU?

I summited Kilimanjaro.

WHAT WAS YOUR FIRST JOB?

I was a linguistics tutor at university.

WHAT WAS YOUR CAREER JOURNEY TO WHERE YOU ARE NOW AT MURRAY & ROBERTS?

Having studied law, I started my career as a practicing attorney specialising in dispute resolution and commercial work.

After a few years I decided to join the corporate world and worked for Steinhoff International as Group Legal Advisor where I headed up the legal department for the Unitrans Group of companies.

In 2010 I joined Murray & Roberts Cementation.

WHERE DID YOU GROW UP?

I grew up in Port Shepstone and spent almost every weekend on the beach! **R**



I think Murray & Roberts Cementation is particularly well placed to win work and to take full advantage of opportunities, even more so when the industry starts to climb out of the current downturn.

SALLY DOWNING, COMMERCIAL EXECUTIVE
MURRAY & ROBERTS CEMENTATION

Our industry has many opportunities if you consider the developmental requirements in Africa and it has a critical role to play in uplifting communities.

CLIVE GOVENDER, PROCUREMENT EXECUTIVE
MURRAY & ROBERTS POWER & ENERGY

WHAT CAREER MILESTONES ARE YOU MOST PROUD OF HAVING ACHIEVED?

I was promoted to General Manager for Supply Chain which gave me exposure to a greater scope of business.

I also established a sourcing, warehousing and assembly facility in China. I am also proud of having been promoted from Supply Chain Executive to Operations Director.

WHAT ARE SOME OF THE CHALLENGES YOU FACE IN YOUR CURRENT ROLE?

My personal challenge is to quickly develop an understanding of the industry and our strengths and weakness.

The other is to energise our teams to constantly identify the opportunities to unlock value within the supply chain. This will require us to re-evaluate the way we do things and will result in the challenge of managing change.

WHAT EXCITES YOU ABOUT THE FUTURE IN YOUR INDUSTRY?

Our industry has many opportunities if you consider the developmental requirements in Africa and it has a critical role to play in uplifting communities.

It is exciting to know that not only do we impact those that are directly involved but have an opportunity to positively impact society as a whole.

WHAT ARE SOME OF YOUR INTERESTS OUTSIDE OF THE OFFICE?

I enjoy being active – running, golf, cycling and being outdoors in general. I also enjoy travelling and experiencing different cultures.

WHAT IS THE BEST PIECE OF CAREER ADVICE YOU'VE RECEIVED?

Set ambitious goals and fail often but fail quickly in order to achieve this.

WHAT WOULD PEOPLE BE SURPRISED TO KNOW ABOUT YOU?

I have an extreme fear of sharks and snakes!

WHAT WAS YOUR FIRST JOB?

Sales Assistant at Edgars.

WHAT WAS YOUR CAREER JOURNEY TO WHERE YOU ARE NOW AT MURRAY & ROBERTS?

I started my career as a Product Controller at Federal Mogul Aftermarket and four years later moved to Automotive Leather Company as a Logistic Co-ordinator.

I then moved back to Federal Mogul as the Procurement Manager and was later promoted to General Manager Supply Chain. After a few years I joined their Global PMO team responsible for strategy alignment within EMEA operations.

My next move was to TecsaReco as their Supply Chain Executive and was promoted to Operations director after a year.

WHERE DID YOU GROW UP?

I grew up in Wyebank, a small suburb in KZN. **R**

BUSINESS PLATFORMS

OIL & GAS

This is Clough AMEC's first onshore petrochemical maintenance contract in Australia, with services to be provided to one of the world's largest liquid ammonia production facilities.

PETER BENNETT, CLOUGH CEO AND CLOUGH AMEC DIRECTOR

CLOUGH AMEC AWARDED MAINTENANCE SERVICES CONTRACT TO PARTNER WITH YARA INTERNATIONAL ASA

Clough, through the Clough AMEC joint venture, has secured a five-year contract, with an option to extend for a further five years, to provide maintenance services to Norwegian company Yara International ASA. Clough AMEC will provide maintenance services to Yara's existing liquid ammonia plant ("Yara Pilbara Ammonia Plant") and to the world's first technical ammonium nitrate ("TAN") manufacturing plant ("TAN Plant") on the Burrup Peninsula, located near Karratha in Western Australia.

Peter Bennett, Clough CEO and Clough AMEC Director comments: "Clough AMEC is delighted to be awarded this contract. Over the past two years, Clough AMEC has worked hard to establish itself in the onshore oil, gas and petrochemical maintenance sector. This is Clough AMEC's first onshore petrochemical maintenance contract in Australia, with services to be provided to one of the world's largest liquid ammonia production facilities."

The scope includes providing maintenance planning support, supplying management services, supervision, tradespeople, tooling and systems, including the Clough Automated Maintenance system (CAMS), to perform routine maintenance services and shutdowns at the Yara Pilbara Ammonia Plant and the TAN Plant.

Henry Laas, Group Chief Executive, Murray & Roberts added: "The Group's strategy requires that our service offerings provide coverage of clients' requirements across the full project life cycle in all chosen regions. This provides diversification benefits both in relation to geographic risk and the spread of revenue and earnings across all segments or phases of the project life cycle. Clough AMEC's maintenance contract win is a prime example of what we are working towards achieving across the Group."

The Yara Pilbara Ammonia Plant forms part of Yara International's global production facility portfolio and is one of the largest ammonia production facilities in the world, with production capacity of 850 000 metric tonnes of liquid ammonia exported from the Dampier Port and traded on South East Asian markets.

The new TAN Plant, fully integrated with the Yara Pilbara Ammonia Plant, is in the final commissioning stages and will have a 330 000 tonne TAN capacity per annum. TAN is the main component in explosives used by the mining, quarrying and construction industries. The TAN produced by the TAN Plant will be marketed and distributed by Orica predominately to mining customers.

"This contract award validates the great work our people have done in delivering fit-for-purpose maintenance solutions, that have a continuous focus on identifying and implementing cost saving opportunities and exceeding operational performance goals," concludes Bennett. **R**



CLOUGH AMEC RECEIVES SUPPLIER RECOGNITION AWARD FROM CONOCOPHILLIPS

Clough AMEC received the ConocoPhillips 2016 Supplier Recognition Award for 'Doing Business Better.'

Clough AMEC is a 50/50 Joint Venture between Clough and Amec Foster Wheeler. The Joint Venture was established in 2004 to provide engineering, operations and maintenance services to the Australasian oil and gas industry. Clough AMEC has offices in Perth, Darwin, Gladstone, Brisbane, Melbourne, Port Moresby and Dili as well as access to a combined worldwide resource pool of over 40 000 people.

The award recognises the work undertaken by Clough AMEC following the commencement of the Bayu-Undan operations and maintenance contract in January 2016. Clough AMEC restructured the labour contracts, rationalised labour agencies and reviewed direct employment of personnel that resulted in significant operational efficiencies and savings. Clough AMEC also enhanced the training and development of local Timorese workers, improving productivity and increasing the overall percentage of Timorese personnel in the workforce.

The contract with ConocoPhillips involves asset support and operations and maintenance services to the Bayu-Undan development. The Bayu Undan offshore facilities consist of a floating storage and offloading facility and three fixed platforms, a remote wellhead platform, a compression, utilities and quarters platform, and a drilling, production and processing platform.

Nigel Hudson, Clough AMEC Director, said: "I am delighted that the Clough AMEC team has been recognised by ConocoPhillips for 'Doing Business Better.' Our team at Bayu-Undan has a dedicated development plan for Timor Leste personnel, which forms a significant part of our daily operational activities. Enhancing the training and development of Timorese people demonstrates our commitment to the local workforce as well as working collaboratively with ConocoPhillips and other contractors." Clough works with some of the world's largest companies to engineer, construct, commission and maintain critical facilities for the oil and gas, metals and minerals and infrastructure sectors. Clough's full project life cycle delivery model reduces risk and optimises safety, productivity and cost across every phase of a project. **R**

GCR MONGOLIA AT OYU TOLGOI

The Oyu Tolgoi mine is one of the most exciting developments in copper and gold mining for several decades and is a world-class facility. It contains reserves and resources that make it one of the world's largest known copper and gold deposits. The project is expected to be a significant contributor to Mongolia's development.

Situated in the southern Gobi Desert of Mongolia, approximately 550 kilometres south of the capital, Ulaanbaatar and 80 kilometres north of the Mongolia-China border, Oyu Tolgoi is jointly owned by the Government of Mongolia (34%) and Turquoise Hill Resources (66% of which Rio Tinto owns 51%). Rio Tinto has also managed the project since 2010.

GCR Mongolia ("GCR") is a joint venture between Global Infrastructure Partners LLC ("GIP"), RUC Cementation Mining and Clough. GCR Mongolia combines the strengths of three world-class organisations each with diverse but compatible skills.

Headquartered in Ulaanbaatar, GIP is the first ever Mongolian underground construction company. Since inception in 2013, GIP has made a significant contribution to the development of the Mongolian infrastructure and mining industry. GIP has over 30 engineering staff and more than 200 workers with specialist construction expertise.

GCR MONGOLIA'S CURRENT SCOPE OF WORK INCLUDES:

- Bulk and detailed earthworks;
- Civil and concrete works for major concrete structures;
- Buried services works including, 35kV, 10.5kV electrical cabling and multiple pipeline scope works consisting of HDPE and carbon steel; and
- Decommissioning of 35kV overhead powerlines including the removal of eight tower structures.

Graham Stacey, Project Manager at Oyu Tolgoi has worked in many countries including Papua New Guinea, Australia, Zambia and Hong Kong and says that Mongolia has many similarities to previous projects he has completed but that the climatic extremes are a new experience, "To work in the extreme heat of the Mongolian summer and then to learn to cope with the extreme cold of the winter will be a new challenge!" Graham says the current Oyu Tolgoi team and Mongolian people have been very welcoming which helps newcomers to adapt quickly to the country.

Graham's team has been brought together to work in a brownfield environment on a project with a broad multi-disciplinary scope and tight timeframes. These elements would typically combine to cause stress in any team however they have pulled together well and in a very short time to overcome the challenges on site.

"I am confident we will deliver a world-class project on time, within budget and above all else, safely," concludes Graham. **R**



UNDERGROUND MINING

We understand that the mining industry has unique operating environments and specific challenges and our customised services are designed to meet such organisational objectives, trainee learning abilities, budgets, teaching styles and learning platforms.

TONY PRETORIUS, ETD EXECUTIVE AT THE MURRAY & ROBERTS TRAINING ACADEMY



RUC CEMENTATION MINING SECURES SIGNIFICANT UNDERGROUND MINE DEVELOPMENT AND PRODUCTION CONTRACT

RUC Cementation Mining has secured a significant three-year (with option for extensions) contract for underground mine development and production, at Dacian Gold Limited's new Mount Morgans Gold Project near Laverton in Western Australia.

This award represents a major milestone in RUC Cementation Mining's transformation from mid-level to being recognised as a top-tier mining contractor. The contract was awarded after an extensive competitive bid process.

Dacian Gold recently released a feasibility study for the project and stated that it will spend an estimated AU\$220 million on its Mount Morgan Project, which is located approximately 750 kilometres northeast of Perth in Western Australia. The mining lease area is situated in the Laverton gold district that is known to contain some 30 million ounces of gold, making it the second highest endowed gold district in Western Australia.

This is a significant award for RUC Cementation Mining and a material award for the Group's global Underground Mining platform.

The outlook for metals and minerals is steadily improving and it is expected that the Underground Mining platform will in the short term continue to benefit from new investment in the global mining sector. **R**

THE MURRAY & ROBERTS TRAINING ACADEMY "A QUANTUM LEAP AHEAD OF INDUSTRY TRAINING BEST PRACTICE"

Safety, efficiency and prioritising risk management at the highest level, lies at the heart of continued investments in the Murray & Roberts Training Academy ("MRTA"), located in Bentley Park, Gauteng.

The MRTA is the largest mining contracting training facility in South Africa and offers a diverse range of training services from soft skills essential for personal communication and interaction in the workplace through to occupationally-directed technical skills and safety competence programmes with international recognition. The academy provides turn-key solutions across a wide field of industries and disciplines including engineering, conventional and trackless mining, shaft sinking and mining services.



The academy carries ISO 9001:2008, 14001:2004 and OHSAS 18001:1999 certification and is accredited with the Mining Qualifications Authority and is also an approved training provider with the British Safety Council.

Through a unique combination of blended learning which includes e-learning, instructor-led coaching, simulation, virtual reality and mock-up practical training, the training academy provides customised site-specific training to meet the organisational needs of mining companies.

The ultimate goal of any training programme should be to equip the learner with the requisite knowledge, skills and experience required to perform their work safely and proficiently in a productive manner. Drawing from on-site experience has allowed the academy to design and develop values-driven training programmes that seamlessly combine theory (passive learning) and practice (active learning) in an integrative manner.

Says Tony Pretorius, ETD Executive at the MRTA, “We understand that the mining industry has unique operating environments and specific challenges and our customised services are designed to meet such organisational objectives, trainee learning abilities, budgets, teaching styles and learning platforms.”

The leadership team and employees of the MRTA have years of industry experience and are suitably qualified and accredited to provide training. The instructors draw on practical real life situations to drive home the importance of safety through easy understood and relevant delivery methodologies. **R**

CEMENTATION CANADA – PUTTING PEOPLE FIRST

With its mission statement: “To earn the distinction of being the mining contractor of choice of both clients and employees through excellence in safety, performance beyond all expectations, and building long-term relationships based on a ‘best for project’ philosophy,” Cementation Canada is proud of its core values, one of which is to treat its people well by giving them every opportunity to succeed.

It’s clear that Cementation Canada is doing something right. Just ask their employees. Over the past eight years, the company’s employee engagement rating has consistently been well above 90 percent.

“I want our people to know that everyone contributes to the success of the organisation,” says Roy Slack, President of Cementation Canada. “If someone isn’t contributing, then I first look at management – not the employee. I believe that people want to work hard and do a good job and the exceptions are just

that – exceptions. As leaders, it is our job to make sure people are engaged and contributing.”

“Cementation Canada strives to keep its employees engaged by listening first and then acting,” says Penny English, Cementation Canada HR Solutions Manager. “If you note the name of the department, it’s not the HR department – it’s the HR Solutions department and we demonstrate that every day to our employees.”

The HR Solutions department has a vision, mission and values statement that align with the corporate vision, mission and values. “We are here to help,” continues Penny, “and our mission is to help employees succeed.”

The HR Solutions department has also developed an in-house Leadership Development Programme. There are numerous learning opportunities across the programme, including mentoring by senior managers and access to self-directed learning modules that cover more than 40 leadership topics. The self-paced modules include interactive learning activities, video insights and other downloadable tools.

“I enjoy participating in the programme and will let you in on a secret,” says Roy. “I’m probably learning as much or more than the participants. Every time I attend a session or review an assignment, mentor a participant or lead a training session, I am learning as well.” Roy is proud of the company’s culture, where employees are willing to help each other out however possible.

Continues Penny, “We have one of our senior engineers helping a colleagues’ child with physics. The employee has an interest and passion for mentoring others and the student gains enormous benefits from the arrangement. Our employee is thrilled he was able to help out.”

“How we treat people is strongly influenced by how we have been treated in the past – the good and the bad supervisors, colleagues and companies we have worked for,” says Roy. “This is not blind influence or intuition. The way that individuals treat each other and care about each other drives a culture that establishes that as the norm.”

Expansion and growth provide a great opportunity for HR Solutions to work with their human resource partners globally and to look at new and exciting ways to engage employees.

Concludes Roy, “The potential project opportunities for Cementation Canada means more training opportunities for our people in project delivery, a better understanding of the full project life cycle which then enhances the development of our service offering and leads to opportunities for employees on projects in Canada, the US and around the world.” **R**



POWER & WATER

We are committed to delivering safe, quality work for our clients and are proud to be part of this cutting-edge project.

HARDUS ROBINSON, MURRAY & ROBERTS POWER & ENERGY SITE MANAGER

MURRAY & ROBERTS POWER & ENERGY COMPLETE FLAGSHIP MGO STORAGE FACILITY AT TAKORADI PORT IN GHANA

In April, the Ghana Oil Company commissioned a US\$15 million marine gas storage facility, the largest facility in Ghana.

Engineering design of the facility began in June 2015 and construction commenced in September that year. The facility, which is capable of storing 13,5 million litres of marine gas oil, is able to receive and dispatch marine gas oil through a completely automated system. The storage facility is equipped with state of the art flow meters, filters and a coaleser and is able to dispatch marine gas oil at a flow rate of up to 240 000 litres or 210 tonnes per hour.

In support of environmental objectives, an oil-water separator system ensures that all effluent water is captured and then treated before being safely discharged.



The facility also has a comprehensive firefighting system comprising a water sprinkler system, which cools off and extinguishes the exterior of the tanks and facility, and a fire foam component, which will extinguish any fires inside the tanks.

The entire facility was designed, constructed and commissioned by Murray & Roberts Power & Energy, a first for the company. Says Steve Harrison, Power & Water platform CEO, "We are very proud of the team and their accomplishment on this flagship project."

The storage facility has opened economic opportunities in the energy sector for the port and Ghana. **R**

MURRAY & ROBERTS VISITS SHANGHAI ELECTRIC COMPANY GROUP IN CHINA

By 2025, the Murray & Roberts Group aims to be a leading multinational engineering and construction group that applies its project life cycle capabilities to optimise fixed capital investment.

It was with this vision in mind that Murray & Roberts Power & Water platform CEO, Steve Harrison led a team to visit the Shanghai Electric Company Group ("SEC") in the People's Republic of China. SEC is a mechanical and electrical equipment manufacturer and develops equipment for industry sectors related to power generation, power transmission and distribution, electromechanical integration, transport and environmental mitigation. The company's products include power generators, heavy castings and forgings, wind turbines, pressure vessels, steam turbines and water treatment systems.

The visit to SEC coincided with Aquatech China 2017, an international water technology exhibition. Vusi Tsale, Business Development Director at Murray & Roberts Power & Energy, Harry Singleton, Operations Executive at Murray & Roberts Water and Steve, visited the exhibition and also had the opportunity to visit an Organica Water plant being constructed in Shanghai.

Henry Laas, Murray & Roberts Group CEO was also part of the Murray & Roberts delegation and together with Zhang Ke, SEC Vice President, signed a cooperation agreement.

Shanghai, on China's central coast, is a global financial and transport hub and has a population of more than 24 million people. **R**



ELECTRICAL AND INSTRUMENTATION CONTRACT AT SASOL SECUNDA

Murray & Roberts Power & Energy has secured an electrical and instrumentation contract with French multinational Air Liquide on Sasol's Train 17 project.

Air Liquide won the contract to design, build, own and operate one of the largest air separation units ("ASU") ever built. The ASU has a total capacity of 5 000 tonnes per day, supplying oxygen and nitrogen to Sasol's proprietary synthetic fuels and chemicals complex in Secunda, South Africa. This is the 17th train to be built at the complex.

This train will be the most energy efficient oxygen train on site, using the latest air separation technologies and economies of scale to reduce the impact on the environment.

The contract is a fast-track project and is being implemented by an experienced electrical and instrumentation team lead by Hardus Robinson, Murray & Roberts Power & Energy Site Manager.

Says Hardus, "We have made good progress and anticipate the installation and construction work to be completed by the end of August, with some commissioning expected to continue until the end of October."

The ASU is expected to be fully commissioned by December 2017.

"We are committed to delivering safe, quality work for our clients and are proud to be part of this cutting-edge project" concludes Hardus. **R**



SOLAR-POWERED WATER TREATMENT SOLUTIONS FROM AQUAMARINE WATER TREATMENT

Aquamarine Water Treatment engineers and manufactures a range of water treatment processes that can treat most water sources. Their solar-powered water treatment solutions harvest the sun's energy to provide clean drinking water and deliver an off-grid solution for rural communities.

A typical containerised system that includes both power generation and water treatment comprises a 1 x 12 metre and 1 x 6 metre container and can provide good quality drinking water for up to 8 000 people.

Says Lee Hodgins, Business Development Manager at Aquamarine Water Treatment, "We are proud of the benefits that our solar-powered system provides and look forward to implementing these solutions across the continent." **R**



COMMUNITY AND SKILLS DEVELOPMENT AT SECUNDA OIL & GAS

Murray & Roberts actively facilitates and supports opportunities for growth and socio-economic development within the communities in which we work. Central to this is a considered focus on education and skills development.

Secunda Oil & Gas, part of the Murray & Roberts Power & Water platform, established a nine-month training programme, in partnership with Fluor Training Centre. The programme offers students competent training within the oil and gas industry and focuses on the critical areas of welding, pipe fitting and rigging. It includes theoretical learning at the Fluor Training Centre, as well as on-site training in Secunda and all costs are covered by Murray & Roberts.

After an extensive recruitment drive, 10 local students from the Govan Mbeki district were selected and began the programme in April 2017.

The successful students are energetic and actively participate in the programme and have received excellent feedback from the training centre. **R**



CORPORATE CITIZENSHIP



PLAYING FOR CHANGE – MURRAY & ROBERTS' CLIENTS, PARTNERS AND EMPLOYEES MAKE A DIFFERENCE FOR CHILD WELFARE

The annual Murray & Roberts Child Welfare Golf Day was hosted at the outstanding Glendower Golf Course during May.

This annual event is the Child Welfare Fund's main fundraising activity and along with employee payroll giving, makes an enormous difference to vulnerable and orphaned children in South Africa. Says Ed Jardim, Chairman of the Murray & Roberts Child Welfare Committee, "Every year we are humbled by our players and sponsors' generosity. Our players enjoyed perfect weather on the day and I think it's safe to say a great day was had by all."

The shot-gun start kicked off a day that saw 144 golfers make their way across one of the best golf courses in South Africa. Glendower offers a challenging course and is said to be a test for even the best golfers. Set in beautiful surroundings, the kikuyu fairway has 64 bunkers and water hazards on most holes, so accuracy is key.

"The golf day is our flagship fundraising event and we will raise in excess of R100 000 from the event this year. There are so many worthy causes to support in South Africa, yet our clients and partners choose to spend their time and money with the Child Welfare Fund – and for that, we are truly grateful", concludes Jardim.

ABOUT THE CHILD WELFARE FUND

Community engagement within Murray & Roberts has its origins in the 1950s, with the establishment of the Murray & Roberts Child Welfare Fund. Former director and founder, Dr Andrew Roberts, initiated the programme in response to the growing plight of children in South Africa. Partnering with Child Welfare South Africa at the time, Murray & Roberts supported projects aimed at improving the social welfare of society's most vulnerable members. Over the years, the Murray & Roberts Child Welfare Fund has evolved into an established programme and has been adopted as the Group's flagship employee engagement programme. Our employees have always been the human face of Murray & Roberts in the community and the Child Welfare Fund remains the conduit through which meaningful employee involvement and volunteering is facilitated. **R**

#RISEAGAINSTHUNGER MEAL PACKING EVENT ON INTERNATIONAL MANDELA DAY

Murray & Roberts took part in the 2017 Stop Hunger Now #Riseagainsthunger Meal Packing event for International Mandela Day.

The event is an opportunity for corporate organisations to help end child hunger with volunteers packing nutritious meals for those in need. The meals comprise rice, soya, dehydrated vegetables and a fortification pack of 23 essential vitamins and minerals, specially formulated to combat malnutrition.

Ntombi Langa-Royds, non-executive Director at Murray & Roberts and Thokozani Mdluli, Murray & Roberts Group HSE Director joined over 60 Murray & Roberts employees at the Sandton Convention Centre and succeeded in packing 3 240 meals in 67 minutes. Enough meals to feed up to 15 children, five meals a week for a year.

International Mandela Day was first inspired at Nelson Mandela's 90th birthday celebrations in Hyde Park, London where he said, "It is time for new hands to lift the burdens. It is in your hands now." He started campaigning for human rights in 1942 and gave 67 years of his life in service of humanity.

International Mandela Day asks that we all give one minute for every year of Mandela's service, in service of others.

Says Thokozani, "It was a privilege to spend 67 minutes alongside my colleagues, remembering the late Nelson Mandela and his impact on society." **R**



NEWS



HENRY LAAS, MURRAY & ROBERTS GROUP CHIEF EXECUTIVE, HOSTS A TOWN HALL TALK

The inaugural Town Hall Talk was an opportunity for employees across the Group to meet with Henry to talk about various Group issues. There was much to discuss as the Group had accomplished and experienced a great deal during the financial year.

Topics included the challenging market and environment, who we are as a Group after the divestment from the Infrastructure & Building businesses, the major investment by ATON, a German investment fund and the Group's sub-sector move on the JSE.

A large number of employees attended the event and a dial-in facility was offered to those who were not able to attend. A drop box was also provided for anonymous questions.

A number of points were emphasised during the talk:

• WHO WE ARE:

We are a specialist engineering and construction company, delivering our capabilities into three global natural resources focused market sectors: oil & gas; metals & minerals and power & water.

• WHO DO WE WANT TO BE BY 2025:

We strive to be a leading multinational engineering and construction group that applies our project life cycle capabilities to optimise fixed capital investment.

• EXCELLENCE AND GROWTH:

Operational excellence across all our operations is not negotiable and we will focus on achieving growth through acquisition as well as organic growth.

• FINANCIAL HEALTH:

The order book is quite low at the moment, but we do believe we are at the 'bottom' of a very challenging market.

We have quality businesses and experienced leadership teams in the Group and we believe the market will show a more positive trend in the medium term.

• TRANSFORMATION AND BBBEE:

We have many talented and experienced employees in our Group and we need to ensure that we present a working environment that creates opportunities and career growth to support the Group's transformation aspirations.

We believe we are much stronger as a Group when represented by a diverse workforce.

• THE FUTURE:

Our DNA is that of an engineering and construction company. We are a multinational company and we have chosen to focus on the natural resources market sectors. As the world's economies and population grows, we are going to see a continued and growing demand for natural resources and in turn our services/capabilities – this is what we see as a sustainable future for the Group.

NEWS



QUARTERLY BREAKFAST WITH HENRY AND DANIEL

Henry Laas, Murray & Roberts Group CEO and Daniël Grobler, Murray & Roberts Group CFO, hosted the first of their quarterly breakfasts during July. The quarterly breakfast is an opportunity for a small group of employees to spend time with Henry and Daniël over breakfast in discussion about topics that are relevant to the Group.

Engineered Excellence, along with our values, is a concept that supports the Group's vision to, by 2025, be a leading multinational engineering and construction group that applies our project life cycle capabilities to optimise fixed capital investment.

Says Henry, "Whether we are developing our people or delivering our projects, it is always done to achieve an outcome of Excellence."

To stand a chance of being selected, employees were asked to give their thoughts on what *Engineered Excellence* means to them.

Concludes Daniël, "The breakfast was a valuable experience and we enjoyed the time spent with our colleagues." **R**

MURRAY & ROBERTS BURSAR REPRESENTS AT THE CONSTRUCTION MANAGEMENT SUMMIT

Ronnie Siphika, a bursary student with Murray & Roberts Power & Energy, participated as a speaker at the 6th South African Counsel for Project and Construction Management Professions Construction Management Summit in Durban.

Ronnie's participation in this year's summit was largely because of his involvement in a number of student organisations at Wits University. He delivered an outstanding presentation to an audience of over 230 construction professionals. It was a notable achievement as Ronnie was the first student ever to be invited to present at the summit.

His presentation emphasised the importance that the industry plays in developing potential leaders within the industry and how vital practical experience is to students in order to impart practical and business skills before they enter the workplace.

Ronnie obtained his undergraduate degree in BSc Construction Studies in 2016 and started as Murray & Roberts' bursar during his second year of study. **R**

***Engineered Excellence* means we are committed to nurturing worthwhile relationships.**

MUSUMBA LOMBE, VACATION STUDENT, MURRAY & ROBERTS POWER & ENERGY

***Engineered Excellence* is to be the best by example, reputation and quality in all aspects and it is what our values are based on.**

WILLEM BRONKHORST, DRAUGHTSPERSON, MURRAY & ROBERTS CEMENTATION

***Excellence* is not just delivered through the quality of our products, but also through the superiority of our service.**

BRECHT MOHONATHAN, FINANCIAL ACCOUNTANT, MURRAY & ROBERTS CEMENTATION

***Engineered Excellence* is to skilfully plan for Murray & Roberts to be an outstanding company.**

NICOLE MOREIRA, BOOKKEEPER, MURRAY & ROBERTS CEMENTATION

It's the continuous ability to recognise what needs to be improved and finding the best method to implement it.

LINDA MASINA, INTERN, MURRAY & ROBERTS POWER & ENERGY





The road from welder to quality inspector was not an easy one, but with the support of my colleagues and through the development programmes offered by Murray & Roberts, it has been a dream come true and proof that with hard work and dedication anything is possible.

**TEBOGO MATHEBULA,
MURRAY & ROBERTS QUALITY CONTROL INSPECTOR**

TEBOGO MATHEBULA SHOWS THAT WHERE THERE IS A WILL, THERE IS ALWAYS A WAY.

Tebogo Mathebula was employed by Murray & Roberts in February 2012 as a double coded welder.

She attended a number of training programmes offered by Murray & Roberts and applied what she had learnt back on site.

Her skills, determination and dedication to *Engineered Excellence* meant she was selected to be part of the Quality Control training programme with the South African Institute of Welders.

Tebogo successfully completed the programme and obtained her Quality Control Diploma.

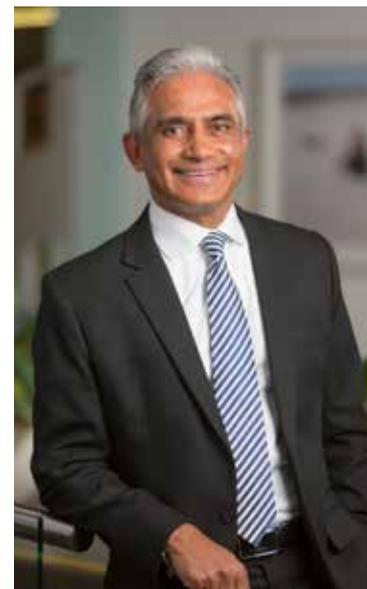
She gained further experience on site, including how to perform inspection activities and being able to confirm the code compliance of a welding procedure.

In 2016 she successfully applied for the position of Quality Control Inspector.

Says Tebogo, "The road from welder to quality inspector was not an easy one but, with the support of my colleagues and through the development programmes offered by Murray & Roberts, it has been a dream come true and proof that with hard work and dedication anything is possible." **R**



MAHLAPE SELLO
MURRAY & ROBERTS
RETIRING CHAIRMAN



DR SURESH KANA
MURRAY & ROBERTS
INCOMING CHAIRMAN

MAHLAPE SELLO RETIRES AS MURRAY & ROBERTS CHAIRMAN

Mahlape Sello will retire as Murray & Roberts chairman at the 2017 annual general meeting.

Mahlape has served on the Murray & Roberts Board as an independent non-executive Director since 2009 and as chairman from 2013.

Says Mahlape, "My time at Murray & Roberts has been both challenging and deeply satisfying. I am indebted to my colleagues on the Board, who have been exemplary in their duty of care and their respective contributions to positioning the Group for sustainable growth and returns for all its stakeholders."

"My term as chairman has at the same time been a formative time for the Group and it is gratifying that my retirement coincides with Murray & Roberts coming of age in its strategic development." continues Mahlape.

The Board has appointed Dr Suresh Kana independent non-executive chairman. Dr Kana has been a member of the Board since July 2015.

Concludes Mahlape, "To the executive teams of the Group and the business platforms, and all the people of Murray & Roberts, it is ultimately your talent and dedication that has delivered the Group to this point where the *New Strategic Future* is a visible reality, notwithstanding the profound change that you have faced and the challenges you have met. I will watch the progress of the Group in the years ahead with much interest and great pride." **R**

INNOVATION

The response has been very encouraging as developing innovative technologies in our industry can be a challenge but with the right support, we can be successful in changing the way things are done.

ROY SLACK, PRESIDENT OF CEMENTATION CANADA



CEMENTATION CANADA – DEVELOPING DISRUPTIVE TECHNOLOGY

Cementation Canada and its Injection Hoisting technology was a winner at the recent #DisruptMining competition in Toronto, Canada.

#DisruptMining is a global competition designed to showcase individuals, groups and companies that are using exponential technology and disruptive concepts to tackle the challenges faced by the mining industry.

Using a combination of existing and proven crushing, pumping and slurry technologies, Cementation Canada has developed a proof of concept model for process Injection Hoisting that under certain conditions would eliminate the need for mine shaft production hoisting or trucking, by transporting ore or waste to the surface using a pump driven pipeline loop.

Cementation Canada has been involved in a number of innovative developments over the past years, many of them focused on cutting rather than blasting rock in mine development and shaft sinking. Murray & Roberts Cementation is currently working on blind shaft boring technology and Injection Hoisting may become a parallel enabling technology to enhance the shaft boring system. These rock cutting technologies have great potential but it was recognised that although they proposed a very different mechanism for breaking rock, they still reverted to the traditional methods for moving waste or ore to surface, which often tended to be the bottleneck in the cycle.

Roy Slack, President of Cementation Canada says, “We recognised that hoisting waste was still a major part of the sinking cycle. While attending a conference, we saw a presentation on a blind boring project to a depth of 1 000 metres under a mud cover with the cutting head trapping the cuttings and bringing them up the drill pipe by means of reverse circulation. What was very interesting to me was not the blind boring in soft rock which is well developed technology, but that the system could lift the material up a 1 000 metre pipe. This was what we wanted to do.”

Alun Price Jones, Technical Director at Cementation Canada and his team were tasked with developing this innovation. They looked at existing reverse circulation systems and past hydraulic hoisting systems. A reverse circulation system typically brings the cuttings into the drill pipe at the cutting head. This was not an option for the shaft bottom system so early in the development. The challenge of how to “inject” the cuttings into a pipe loop became a focal point. Another key aspect of the pipe loop was the medium that would transport the cuttings. Alun had previous experience with “mud” technology through deep drilling and looked at a drill mud system to help improve the lift characteristics of the system. Other hydraulic hoisting systems were based on a charged batching approach. Instead, the team developed a continuous hoisting approach where the pipe loop acts like a constantly running liquid conveyor and the rock is injected into the system. The idea was to use a combination of existing and proven crushing, pumping and slurry technologies for continuous vertical transportation of rock.

The present design uses a continuous flowing pipe loop from the surface to the mine bottom and back to surface with a bentonite slurry. Ore or waste is crushed and mixed into a slurry and then injected into the upflow pipe at the bottom of the system where the upflow lifts it to surface. At the surface the ore or waste is separated from the slurry and then goes to the mill while the slurry is recovered and put back into the system.

A number of mining companies have expressed interest in further developing the Injection Hoisting technology. “The response has been very encouraging as developing innovative technologies in our industry can be a challenge but with the right support, we can be successful in changing the way things are done” says Roy.

The next step for Cementation Canada is to build a full scale demonstrator model to establish capital and operating costs and to evaluate production levels, and two potential test sites are currently being evaluated. Concludes Roy, “We build mines, but Injection Hoisting is one example of how we are developing technology to build better mines.” **R**

COMPETITION



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TO STAND A CHANCE TO WIN, COMPLETE THE ENTRY FORM BELOW AND ANSWER THE EASY QUESTION. POST OR EMAIL YOUR ENTRY FORM TO REACH US BEFORE 31 DECEMBER 2017 TO:

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Murray & Roberts Competition – SEPTEMBER 2017
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Sandton, Gauteng, South Africa

Remember to include:
"Murray & Roberts Competition – SEPTEMBER 2017" in the subject line.

RULES:

1. The prize will be awarded to the first correct entry drawn.
2. The judges' decision is final and no correspondence will be entered into.
3. The prize is not transferable and cannot be exchanged for cash.

John Goulding, Project Engineer Mechanical at Murray & Roberts Cementation was the lucky winner of a GoPro Hero 5 Black in the March 2017 competition. Congratulations!



ENTRY FORM: ROBUST SEPTEMBER 2017 COMPETITION

Name: _____

Phone number: _____

Address: _____

Question: Who is the incoming Murray & Roberts Group chairman?

* Strictly one entry per person

Terms and conditions apply



**Murray
& Roberts**



**ENGINEERED
EXCELLENCE**

Whether we are developing our people or delivering our projects, it is always done to achieve an outcome of EXCELLENCE.

