A Stefanutti Stocks Publication

Benchmark 21

Continuous pursuit of higher levels of performance

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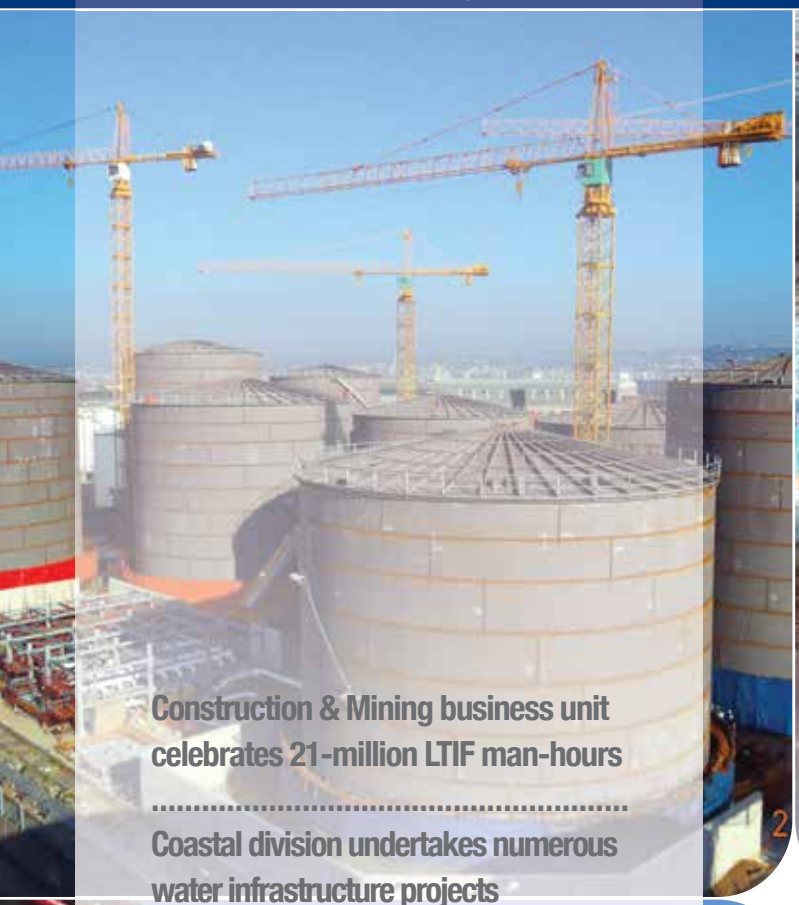


Stefanutti Stocks

excellence in execution

our vision

if you can dream it, we can construct it

our mission

excellence in execution

our values

Candour
Frank and respectful discussions with the objective of finding positive outcomes.

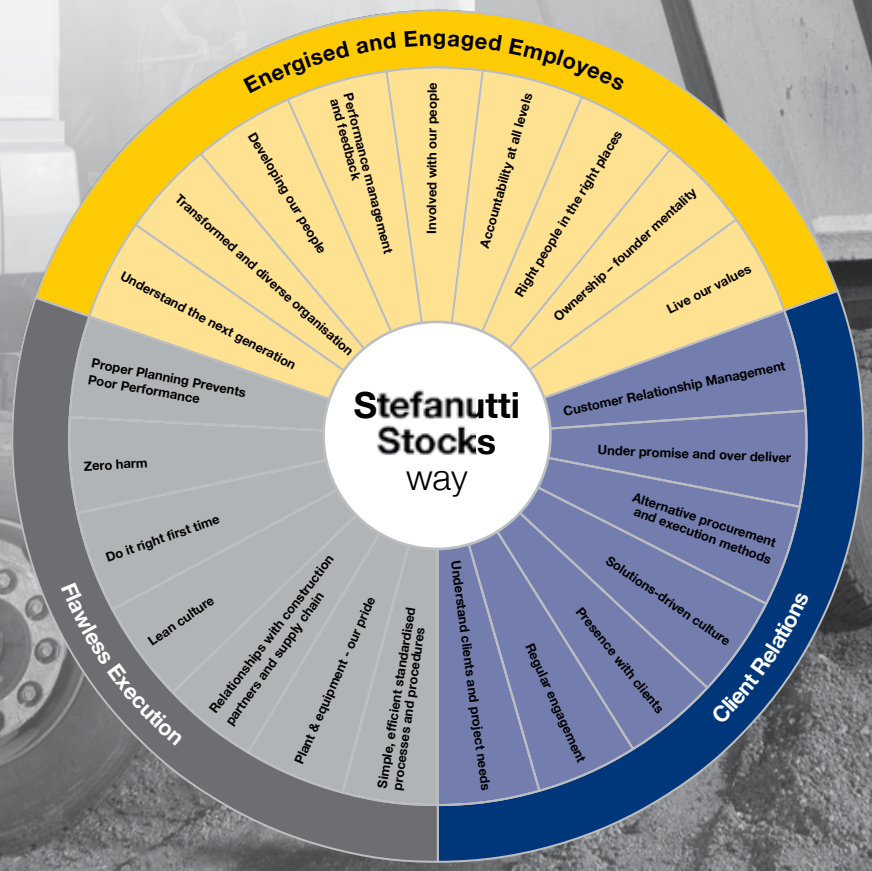
Accountability
Taking personal responsibility for one's actions and the resultant outcomes.

People relations
The value which results in people treating one another fairly and with respect and always being mindful of the human dignity of others.

Professionalism
The application of a competent, disciplined and meticulous approach to all aspects of business, resulting in performance of high quality and reliability.

Excellence
A passionate mind-set that puts quality at the forefront of all business activity.

Dynamic
Embracing openness and flexibility of mind and an energetic, pro-active solution-driven attitude.



From the CEO

The South African construction sector has been severely impacted by the operating environment for several years. This has been largely due to the country's low economic growth, as well as policy uncertainty. The run-up to the 2019 National General Elections saw a reduction in the number of public and private tender opportunities and awards. These factors led to a reduction in contract revenue of R500 million to R9,9 billion for the current financial year.

Consistent with experiences reported by other construction companies, the group has been negatively affected by disruptive and unlawful activities by some communities and informal business forums in certain areas of South Africa.

In addition, certain major events had an adverse impact of the group's liquidity position. These include persistent delayed payments by the governments of Nigeria and Zambia and difficulties in converting work in progress into cash. During the second half of the financial year, the liquidation of a contract mining client and the funding of the monthly management costs on a large public sector contract for the national energy provider, has placed an additional burden on the cash resources of the group.

In terms of IAS 37: Provisions, Contingent Liabilities and Contingent Assets, during the current financial year, the group had to provide R263 million for these potential unrecoverable monthly management costs to complete the project. This resulted in the group reporting an operating loss of R158,0 million. This excludes results from the United Arab Emirates operation, which contributed R66 million towards the share of profits of equity accounted investees.

Excluding the IAS 37 provision, the group's operating profit is R105 million, all of which is derived from cross border operations. Approximately 32% of contract revenue was generated from these operations. Traditionally these markets have been more profitable than the local market with more available opportunities.

In the local market opportunities have become available as a result of improved commodity prices and increased activity in the mining sector. Furthermore, there were a number of notable private sector investments especially in the industrial sector, which bolstered the group's overall performance and the order book.

The group's order book is currently R11,5 billion of which 43% arises from cross-border work.

In the short to medium term there are some opportunities in the local market which include surface mining related services in iron-ore, platinum, mineral sands and coal sectors and selected open pit mining contracts predominantly in coal. Further opportunities exist in petrochemical tank farms, clean fuels, smaller oil and gas projects, pipelines, water and sanitation treatment plants as well as warehouses and some design and construct opportunities in the building sector.

Cross-border opportunities exist in road and bridge construction, bulk pipelines, water and sanitation treatment plants and mixed-use building projects. In the longer term opportunities exist with the planned rollout of the Liquid Natural Gas plant in northern Mozambique and the Lesotho Highlands Water Project.

Project Highlights

- Al Tayer Stocks in the United Arab Emirates currently has a diverse and exciting building projects portfolio (article p10) including the revamp of both the interior and exterior of the iconic Atlantis Hotel: The Palm (p12).
- SS Construções (Mozambique) Lda continues to deliver a sound performance and a number of its projects feature in this issue (pp14-16/p24).
- The Building KZN division has completed yet another state-of-the-art production facility (p18) and continues work on contracts for Mercedes Benz South Africa in East London in joint venture with a number of emerging contractors (p22).
- Our Geotechnical division recently completed a design and construct project for Stefanutti Stocks Swaziland (p28) and has also brought its considerable expertise into play at yet another deep level foundation contract for a bridge structure (p29).
- Our Coastal division continues to deliver excellent water infrastructure projects (pp34-35).
- Our Civils division is participating in an exciting precast project for the Nxuba Windfarm (p36).

Safety

In January this year our Building KZN division celebrated the milestone of three-million Lost Time Injury Frequency Rate (LTIFR) hours. The month thereafter, the Construction & Mining business unit achieved the incredible milestone of 21-million LTIFR hours (articles are on p8). Our management and staff remain committed to enhanced health and safety policies and procedures, and together we strive to constantly improve the group's safety performance. LTIFR rate at February 2019 was 0,02 (Feb 2018: 0,11) and the Recordable Case Rate (RCR) was 0,36 (Feb 2018: 0,54).

Awards

The Annual Fulton Awards will take place at the beginning of June, and I would like to wish the teams, including those who entered the Anadarko development (p14) and Olifants River Arch Bridge (p32) all the best at the awards. I would also like to congratulate the Building KZN team that once again excelled at the Master Builders annual awards in KZN – including receiving the Overall Winner award recognising its outstanding achievement in Health and Safety and Building Excellence (article on p9). Howard Schwegmann, our Building business unit's managing director, received the Award of Merit, recognising his noteworthy contributions to the industry.

Women in Construction

We continue to feature some of the women executing excellence within our work place and in this issue we get to know more about junior site engineer Marícia Langa (SS-Construções (Mozambique) and Yolanda du Plessis, our group financial manager (pp6-7)

Stefanutti Stocks Board

Kevin Eborall will retire as board chairman and a director at the company's next Annual General Meeting in August 2019. Zanele Matlala, currently chairman of the Audit, Governance and Risk Committee, will be appointed as board chairman and at the same time step down as chairman of this committee.

After twelve years as your CEO, and twenty-three years in the company I will be retiring from Stefanutti Stocks in August 2019. Russell Crawford, currently CEO Designate, will be appointed as CEO and director of the company thereafter.

On behalf of our management team and our board of directors I would like to thank you for your consistent and considerable efforts and support of the group, in particular during what is currently an exceptionally difficult time. This company is incredibly close to my heart and will continue to remain a passion of mine. I intend to make my final few months as CEO of Stefanutti Stocks count, and I trust that you will all continue to afford Russell and his team the same support that I have enjoyed.

God Bless,

in this issue

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Senior Appointments & Promotions

SS-Construções (Moçambique) Lda
- Tim Smith, Luis Gaspar and Joao Mavie have been promoted to alternate directors, effective 1 March 2019.

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We would like to thank all contributors to the publication and welcome any suggestions or articles. This publication is also available online on our website.

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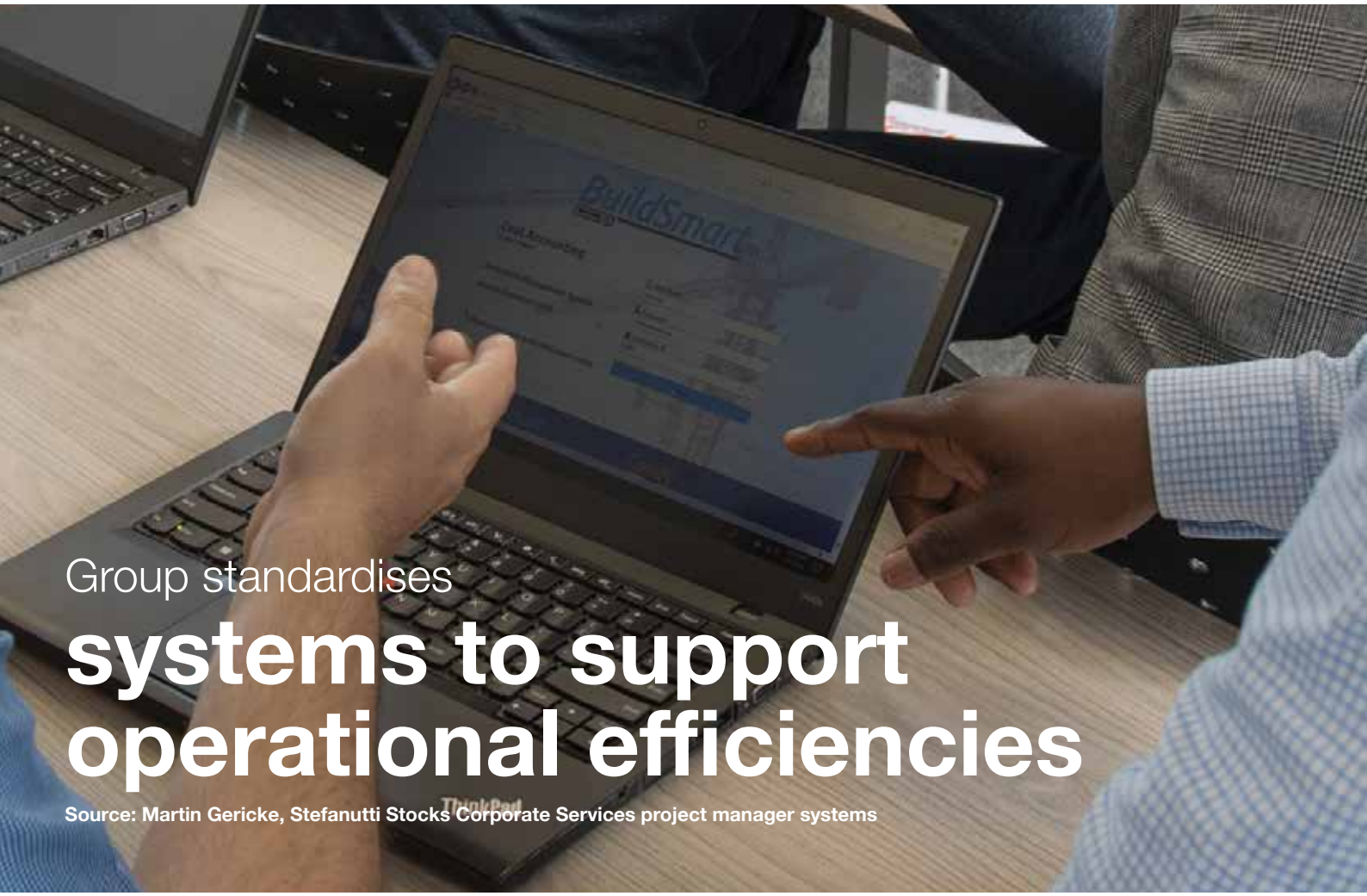


Group standardises

systems to support operational efficiencies

Source: Martin Gericke, Stefanutti Stocks Corporate Services project manager systems

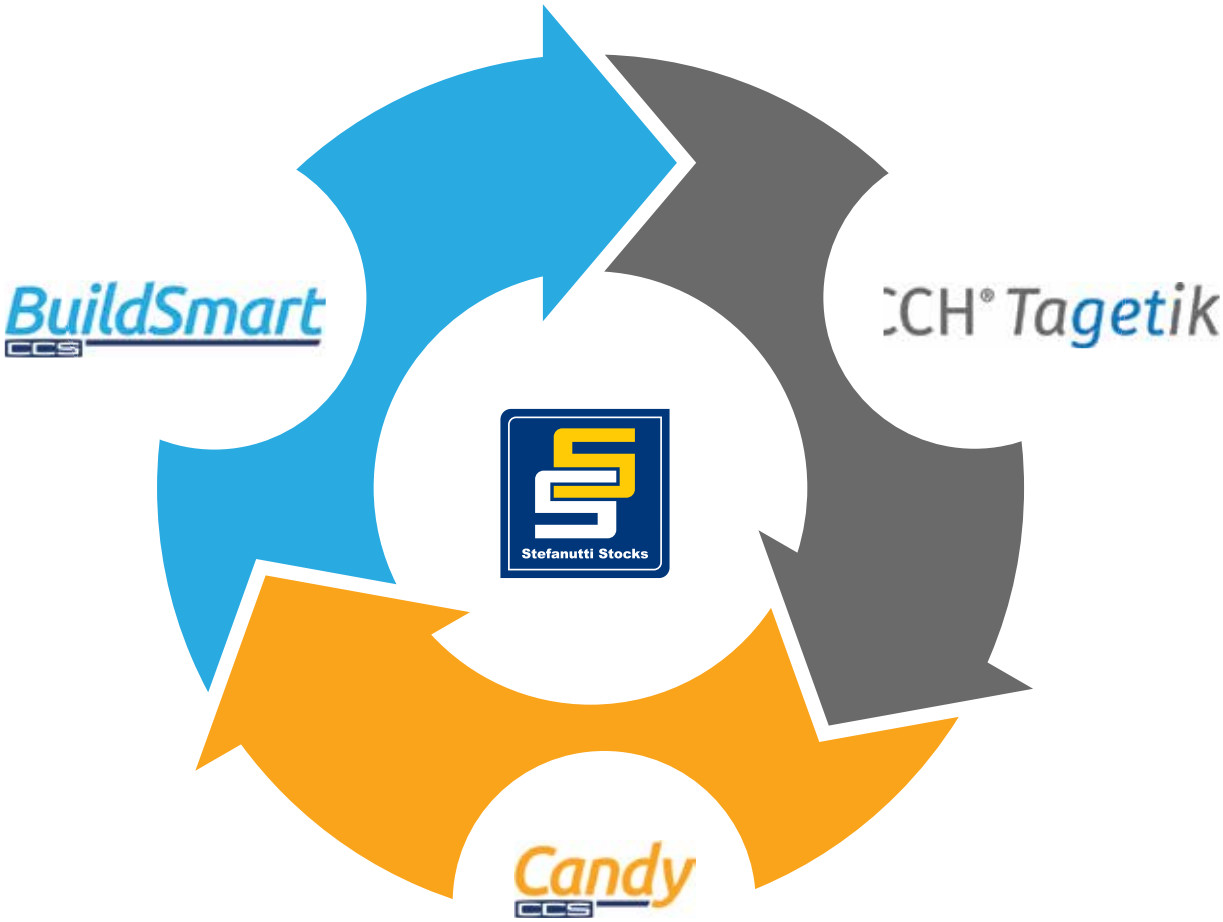
From 1 March 2019 the Stefanutti Stocks group has a single, centralised Enterprise Resource Planning (ERP) system for its financial and procurement processes. This was the final step of an almost three-year process during which the three different systems and related processes that had been utilised across the group, were consolidated. BuildSmart was chosen as the ERP that best meets the group's needs in terms of contributing to more efficient and faster reporting across the group.

The project to align processes and systems across the group began about two years ago in late 2017. At the time the group operated across five independent business units – most of which implemented their own financial and procurement systems. Corporate Services, Mechanical & Electrical and the then Structures business units utilised AccPac. The Building, Roads and Earthworks, Pipelines and Mining Services business units used BuildSmart, however, these were implemented independently.

When in late 2017 Structures and Roads and Earthworks, Pipelines and Mining Services merged, it was decided to align their financial and procurement systems and BuildSmart was chosen as the system to be implemented in the new Construction & Mining business unit. The four business units across the group now had the same ERPs, however, the implementation thereof was different across each one.

The next step in the alignment was the implementation of a single version of BuildSmart across the group – managed by one team, one accounting chart and one naming convention, including standardised activity and ledger codes.

"Since March 2019 we now have one single version of Buildsmart which means that business processes can be aligned further and implemented across the group, including but not limited to contract-related reporting."
Martin Gericke, Stefanutti Stocks Corporate Services project manager.



The consolidation of these systems forms part of a greater initiative through which Stefanutti Stocks seeks to achieve greater operational efficiencies and promote best practice. As part of this alignment project various forums were established, with representatives from each of the business units mandated to investigate the existing systems, processes and policies across Stefanutti Stocks, and to identify best practice that could be rolled out across the group. Each forum is closed as/when it achieves its mandate. These forums include:

- Sustainability Committee
- Human Resources
- Transformation
- Quality
- Procurement
- Plant
- Occupation Health, Safety and Environment
- Information Technology
- Africa Coordination/Finance

"Forums were largely formed to identify a common Stefanutti Stocks way of doing things and to ensure that as a group we do not do things in isolation or duplicate unnecessarily," says Gericke. "The objective was to learn from one another and share ideas while identifying the most efficient and streamlined processes and standardising our way of reporting." Examples include the Plant Forum that has standardised and aligned plant-naming conventions, and the Buyers Forum that implemented a vendor management system (VMS) to manage its spending and the ability to bring onboard suppliers, as well as to consolidate information and report. "The forums have been incredibly valuable and will continue to contribute to the alignment and standardisation of the systems across Stefanutti Stocks' operations," says Gericke.

Quality of reporting

A further focus of the standardisation project has been to implement a reporting process i.e. the generation of accurate management and statutory reports, that would best support the operational efficiencies of the business. Previously a large percentage of the reporting was done via Excel, which was not only a labour-intensive exercise, but also prone to human error as the information was consolidated at various points in the business. Available software systems, that can automate this process, were analysed and Stefanutti Stocks issued a tender to which numerous vendors responded. In June 2018 Tagetik was selected and as of March 2019 Stefanutti Stocks began generating its management reports via this system. In August 2019 it will generate its statutory reporting pack (financial results) using Tagetik.

Next steps

"The next steps are to ensure further alignment around process and to make sure where there are still some differences, but synergies do exist, that these are also aligned," says Gericke. "We are on track to achieve our vision of moving from completely independent ways of doing things and process, to operating in the best possible, standardised way."

This achievement would not be possible without the team working hard on implementing these systems behind the scenes and driving the overall timelines. Colin Hoad, Corporate Services special projects manager has been driving Tagetik whilst Donovan Coetzee and Hannes Smit, application support managers have been driving the Buildsmart alignment and implementation. In particular the various finance divisions have also, and will continue to play a major role.

Women in Construction

Meet **Yolanda du Plessis**, Stefanutti Stocks Group financial manager

I qualified as a Chartered Accountant and worked as an external auditor, before joining Stocks Building Africa (Pty) Ltd in 2007. I was transferred to the Corporate Services department in 2008, after the merge between Stocks and Stefanutti.

Responsibilities

My role as group financial manager is to ensure our financial reporting is in terms of the JSE Listings Requirements. This includes the preparation of the financial announcements which are issued twice a year in May and November, as well as the full set of consolidated annual financial statements. I also project manage the compilation of the Integrated Report and the Sustainability Report which are distributed to shareholders annually.

Although accounting is essentially the same for all industries, the construction industry does have its own quirks which makes it a different environment to report in.

My role also includes tax compliance for the group which entails the submission of annual tax returns, country-by-country reporting and tax queries. Currently much of my time has been dedicated to the new consolidation project, whereby we are automating the reporting function at group, business unit and divisional level by using a new reporting system called "Tagetik". This system will support our reporting in a more effective and efficient way by sourcing information directly from the Buildsmart system and performing translation and consolidation functions automatically, without any manual interference.

Qualifications

I qualified as a Chartered Accountant (CA) SA, after completing my B Compt and B Compt Hons. Then last year my passion for tax motivated me to do a Post Graduate Diploma in International Tax at the University of Johannesburg.

Balancing work, life and studies is quite demanding, and it felt great to receive my certificate this year.

Committees

For the past two years I have been a permanent invitee to two sub-committees of the board – the Social and Ethics Committee as well as the Audit and Risk Committee. The Social and Ethics Committee deals with all socially related items such as transformation, health and safety as well as the environmental impacts of the group. I report to this Committee on the progress of the Integrated and Sustainability Report.

The Audit and Risk Committee deals with the financial side of the business and the financial statements are presented there for approval. As of April 2019, I am a permanent invitee to the executive committee (EXCO) and I'm looking forward to contributing in my financial capacity.

It is always nice to drive past a building, over a bridge or on a road and know that the Stefanutti Stocks group was responsible for building it. My role gives me insight into many aspects of the business and our operations, and I would encourage you to read some of the reports I've mentioned to really understand all the great things the group does.

Women in Construction

Meet **Marícia Langa**, SS-Construções (Moçambique) Lda junior site engineer

My name is Marícia Langa and I am turning twenty-five this year. I completed my Bachelor's Degree in Civil and Transportation Engineering (Hons) in 2017 at the Superior Institute of Transport and Communication (ISUTC), a private university that is located in Maputo.

I have, since childhood, always been fascinated with science and technology, however, didn't know much about civil engineering at the time I chose my study direction at university. While I was at university the construction industry was very active, especially in Maputo, and I remember seeing many buildings being constructed all over the city, including many by SS-Construções. The beautiful Rani Towers was one of these projects, and the one that made me realise that Civil Engineering was definitely the career that suited me – I even felt that it was the career that I was meant to follow, but somehow hadn´t realised it at the time.

Before joining SS-Construções I worked as a real estate consultant for a year, and then, in March 2017 I decided to leave everything behind and apply for a job at SS-Construções This was fortunately the same year that the company decided to open an internship programme, and I was accepted.

I must admit that it was a difficult decision to make: do I leave behind my current financial stability versus pursuing my desire to become involved in construction projects. I decided that I shouldn't let anything hold me back from fighting for the life that I have always wanted – and I went for it.

My first experience in construction was as an assistant quality controller at a condominium the company was building. I felt very welcome, and although it all seemed so complicated, it fuelled my curiosity and passion for construction.

Approximately one-and-a-half years later I was nominated to run a project (the construction of a police station) as a site engineer reporting to, and being mentored by senior contracts engineer Nuno Dias. I felt honoured by the opportunity and felt I could thrive through it, especially as it is not a position often filled by women. In the beginning I found it very challenging, especially as it was a socio-economic development project at which our resources were limited and needed to be optimised to be able to include as many building features as possible.

We delivered the project within six months, with many more elements than expected and received great feedback from the beneficiary. In spite of it being a small project with limitations, I felt incredibly fulfilled and felt it had been an interesting contract with which to begin my career as a site engineer.

Fulfilment is one of the things that I value the most because, in my opinion, true success and true happiness rely on that feeling. Having people around who encourage me contributes to this fulfilment, and knowing that I am capable of making a difference in other people's lives does the same.

As a woman I am always facing the fact that I must conquer my space in an industry ruled by men. Every day when I wake up I remind myself that I have to be strong and assertive to earn respect without the need to demand it, which I have to admit can sometimes be a bit of a struggle.

Nevertheless, I am really looking forward to continue developing my career and being involved in more complex contracts where I can be exposed to challenges on a daily basis. After all, challenges are what make life interesting, and overcoming them is what makes them meaningful.

Construction & Mining business unit achieves

21-million Lost Time Injury Free hours

Source: Clare Kramer, HSE administration manager for the Construction & Mining business unit

Stefanutti Stocks Construction & Mining has achieved in excess of twenty-one million Lost Time Injury Free (LTIF) hours and four-hundred-and-fifty LTIF days. "This is an industry first and was achieved on 15 February 2019," says Clare Kramer, HSE administration manager for the business unit.

As an OHSAS 18001 certified company Stefanutti Stocks consistently focuses on reducing injuries through the continual improvement of its Occupational Health and Safety management systems. "We believe in proactive rather than reactive safety management," says Kramer, "and Near Hit trend analysis is a strong indicator of the areas that require our attention and intervention." The business unit has a design team for its world-class HSE awareness campaigns, that are often adopted by its clients. Its most recent initiative is a "Don't Walk Past" campaign, encouraging all employees to act immediately and intervene should they observe an unsafe act or situation – in the workplace or at home. "In this way we drive a culture of individual accountability for Health and Safety in the workplace, which has proven to have a considerable impact on the reduction of major and minor occupational incidents," concludes Kramer.

Stefanutti Stocks Building KZN celebrates

three-million Lost Time Injury Free Hours

Source: Dallas Pakkiri, Stefanutti Stocks Building KZN safety manager

As at 31 January 2019 Stefanutti Stocks Building KZN had worked a total of 3 031 818 hours without a lost time injury. "The month of March 2019 also marked the sixtieth month of our being lost time injury free," says Dallas Pakkiri, Stefanutti Stocks Building KZN safety manager. "This is a record of which we are extremely proud and one we intend to maintain during 2019 and beyond."

Considering the construction industry is a very high risk and labour-intensive industry, achieving these statistics is remarkable. "This achievement would not have been possible without a strong management commitment, a comprehensive and constantly evolving occupational health and safety (OHS) programme, and more importantly the support from our employees, sub-contractors, suppliers and organisations like Master Builders, Saiosh and FEM," says Pakkiri.

Regular and timely OHS campaigns and constantly improving safety induction programmes have no doubt played a significant part in creating a culture of health and safety awareness on all projects. "In order to remain accident and incident free there is much work that lies ahead of us – and this is a challenge we look forward to taking on, to as we owe it to our employees, clients, contractors and the public alike," concludes Pakkiri.

KZN Master Builders

acknowledges Building KZN's safety achievements

Source: Dallas Pakkiri, Stefanutti Stocks Building KZN safety manager

On Friday 26 October the Master Builders KwaZulu-Natal Annual Awards evening was held at the Durban International Convention Centre (ICC). Master Builders hosted approximately four-hundred guests spanning representatives and stakeholders from the industry, association members, competition entrants, government representatives and the media, including the province's leading radio station, East Coast Radio, which broadcast its show East Coast Party People live from the event.

Once again Stefanutti Stocks Building KZN featured prominently in the awards, walking away with the most prestigious award of the evening – the Overall Winner Award – for the second year running! This award recognises outstanding achievement in Health and Safety and Building Excellence.

Other award highlights include a highly commended for the Hirt & Carter project in the R250 to R400-million category; a highly commended for the Park Square project in the R400 to R750-million category as well as the Presidential Award for scoring over 95 per cent; and a first place, both regionally and nationally, for the Durban Christian Centre in the R100 to R250-million category. Stefanutti Stocks was placed second in the Health and Safety Rewards Programme in recognition of its contribution to a safer construction environment.

The Stefanutti Stocks Building business unit's managing director Howard Schwegmann received the Award of Merit. This is a prestigious award in the Building industry, recognising an individual who has made noteworthy contributions to the industry over a number of years, who has demonstrated innovative thinking and who is an inspiration to the industry.

"We have, since 2008, achieved and maintained a five-star rating with the Master Builders Association in KZN," says Dallas Pakkiri, Stefanutti Stocks Building KZN's safety manager. "We expend immense effort in excelling within the safety arena, and our continued commitment and excellent performance in the safety arena was once again highlighted in January this year, when the business achieved over three-million Lost Time Injury Free hours."

Mechanical & Electrical business unit remains LTI free

Source: Vince Olley, Stefanutti Stocks Mechanical & Electrical business unit managing director

The Mechanical & Electrical business unit celebrated a number of safety achievements within the last year, including retaining its OSHAS 18001 certification after a Dekra audit.

Site highlights included both the Oil & Gas and Electrical & Instrumentation (E&I) divisions completing all Sasol shutdown projects without any lost time injuries. The E&I's maintenance team at Sasolburg also received a SHE Excellence award from client Sasol.

The Mechanical division team at Kumba Mining Sishen's UHDMS project was presented with a trophy for the contractor with the best safety performance; and the team at the Exxaro GG6 Expansion project was awarded a trophy for outstanding SHE performance.

Stefanutti Stocks Building KZN marks the occasion with a team and awards photograph. Standing, from left to right are: safety manager Dallas Pakkiri, Building business unit managing director Howard Schwegmann, senior site agent Sibo Kunene, contracts director Mark Steward, contracts manager Dave Lourenco and senior QS manager Dheshan Naidoo. Seated, from left to right are safety officer Akash Rampersad, HR director Natalina Singh, Building KZN managing director John Dorning, executive secretary Jeshika Singh and senior site agent Wikus du Plessis.

An artist' impression of the new Kindergarten for the American School in Dubai.

Al Tayer Stocks celebrates

diverse project portfolio in the UAE

Source: Roy Blackman, general manager Al Tayer Stocks

Al Tayer Stocks (ATS) is a Dubai-based building and interior contracting company that offers a full range of services, spanning all industries in the UAE. The company was launched in 1998 and has carefully cultivated supply-chain partnerships that ensure the successful delivery of its building, interior fit-out and design & build projects.

"We are constantly growing our footprint across the UAE, as well as expanding our in-house capabilities," says Roy Blackman, Al Tayer Stocks' general manager. "We recently established new divisions – namely Mechanical, Electrical and Plumbing (MEP), Gypsum, and a Design and Build division to exclusively provide services for ATS Interiors and ATS Building. This has added tremendous flexibility to our bidding options and allows us to engage with clients at an early stage in the design process."

Currently ATS Building, led by general manager Simon Jewell, is undertaking a number of building projects across the UAE, including the construction of educational institutions, residential and commercial buildings, hospitality and retail facilities, as well as a mosque.

Educational institutions

Construction of the Jumeirah English Speaking School (JESS) sports hall was recently awarded to ATS. The project commenced in April 2019 and entails the construction of new 2 700m^2 sports hall above the existing car-park building.

The design and build project for a 3 650m^2 Kindergarten (KG) facility (including learning spaces, music room, internal play areas and administrative spaces) at the American School of Dubai commenced in January 2019. The design stage has been completed, and ATS, under a separate contract, was awarded construction of the KG.

Commercial and residential

ATS's current projects include the construction of a multipurpose building for Al Tayer Real Estate LLC in Nadd Al Shiba, Meydan Dubai. The project entails a new build residential and commercial building with a gross floor area of approximately 34 250m^2 consisting of a 7 500m^2 basement car park, 1 250m^2 ground floor shell and core retail, and four residential floors (25 500m^2) comprising one-hundred-and-eight, one- or two-bedroom apartments.

The construction is traditional concrete basement raft slab and outer walls, concrete frame and post-tensioned upper slabs with internal and external blockwork walls. The envelope is finished with an aluminium and glass curtain walling and laminam tile façade. ATS's scope of work also includes all internal high-quality finishes, mechanical, electrical and plumbing (MEP) services, a swimming pool and associated landscaping.

Residential development

Majid Al Futtaim (MAF) Communities is launching a new greenfield mixed-use residential community – Tilal Al Ghaf – in Dubai for which ATS is constructing the Sales Village including:

- iconic sales pavilion,
- three-bedroom villa,
- four-bedroom villa,
- four-bedroom bungalow,
- six-bedroom villa,
- three-bedroom town house, and
- four-bedroom town house.

The new sports hall at the Jumeirah English Speaking School (JESS).

One of the high-end villas within the Tilal Al Ghaf residential development.

An artist impression of a birds eye-view of the apartments that are being constructed in Meydan, Dubai.

The development will include in excess of six-thousand units and will be home to luxury villas, town houses, parks with Ghaf trees, a large central lake, water features, an iconic sales pavilion at the lake, community hub, schools, mosques, utility substations and all associated infrastructure.

This new MAF residential community is being developed with high sustainability targets, along with smart city designs.

Private residences

The KAT luxury residential villa in Nadd Al Shiba, Dubai is being constructed for a private client. This 3 800m² villa comprises four levels (basement, ground, first floor and a roof/ upper roof). ATS's current scope of works on the project includes a reinforced concrete frame, basement retaining walls, blockwork, MEP, plastering, back-of-house finishes, COR-TEN steel, travertine stone, brickwork to the façade and limited landscaping works.

Another further luxury residential project – the Emirates Hills Villa – is being undertaken for Maple Spring Limited. The 2 700m² villa also comprises of four levels. ATS's scope of work includes structural works, basement retaining walls, swimming pool, blockworks, MEP and plastering works.

Commercial and hospitality

ATS Building is currently undertaking cladding to seven buildings (offices and hotels) for Majid Al Futtaim Properties. These rehabilitation and repair projects entail the replacement of ACP-panels on the external façades to MAF's headquarters in Deira; the Novotel, Ibis and Pullman Hotels in Deira, the Ibis Hotel in Al Rigga, and the Novotel and Ibis Hotel in the Mall of Emirates.

The preconstruction phase includes the intrusive and dimensional survey of all buildings, including third-party tests of the panel sub-structure. The construction phase will include the panel replacement and, subject to the as-built condition, the replacement of insulation, damp barriers and panel supporting structure. All works will be executed while the facilities are in full operation and include a variety of external access systems.

Retail facilities

ATS Building is currently constructing the 9 000m² mall extension to the Souq Extra Mall, located in the Dubai Silicon Oasis. The project includes 4 750m² of leasable retail area and 4 250m² comprising of front-of-house mall areas and back-of-house corridors and services areas.

The project also includes the construction of a modern mosque building that is connected to the mall via a decorative glazed canopy.

"Our aim is to deliver high quality projects as we pursue our mission of excellence in execution across the United Arab Emirates." says Blackman. "We're delighted for the opportunity to be involved in such a diverse portfolio of construction projects, and are grateful to our clients who continue to support us," says Blackman.

A high-end villa being constructed for a private client.

The sales pavilion at Tilal Al Ghaf residential development.

Al Tayer Stocks Interiors revamps Dubai's iconic

Atlantis Hotel: The Palm

Source: Ian Milford, Al Tayer Stocks Interiors general manager

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Al Tayer Stocks' (ATS) Interior division is currently undertaking two high-profile hospitality projects at Atlantis Hotel: The Palm in Dubai, comprising an interior refurbishment project as well as façade painting works.

Interior

The Initial thirty-three-month long refurbishment project comprises of the demolition and refurbishment of 1 532 guest rooms, suites and corridors. The scope of work involves:

- Complete strip out of the bathrooms (back to basic pod structure) and relining with marine plywood.
- New waterproofing to the bathroom floors and walls with ceramic tiling.
- New sanitary ware as well as both new and refurbished joinery, and the installation of mirrors and lighting to complete the bathrooms.
- New custom-made joinery with marble inserts, carpets, lighting and finishes to the bedrooms.

"We were initially shortlisted from within the tender process where we were engaged in an open book, added-value process, where the specified materials were re-engineered in order to provide a value-for-money solution," says Ian Milford, ATS Interiors general manager.

Construction took place within an operational hotel environment and the initial duration allowed for each section (equating to circa fifty-five rooms per section) of the works, was forty-four days. This has been reduced to thirty-five days per section and an overall accelerated programme of five months.

The team, headed up by senior project manager James Toy, has completed two restaurants during this period. The Wavehouse Entertainment venue (which was a separate negotiated design and build project) including the demolition of the existing entertainment venue, was also completed by ATS in only twelve weeks.

Façade

In March 2019 ATS began repainting the entire façade of the Atlantis Hotel as well as undertaking the repairs to the EFIS external finish.

This project includes all the necessary surface repairs as well as the full replacement of the existing mastic jointing. It will primarily be

carried out utilising rope access systems, with low rise areas of the resort being accessed from scaffolds. The façade's finishes contribute to the structure's iconic aesthetics and it was imperative that these were not altered in any way. It was also a prerequisite that the look of the building be maintained during the refinishing works, in order to keep the impact of the works to a minimum.

"Al Tayer Stocks is extremely proud of the relationship we have built with the Atlantis teams over the last two years," says Milford. "We have been able to deliver a quality product to our client, ahead of the planned and agreed schedule, which in turn has enabled the hotel to release guest rooms early, and increase their planned revenue."

Captions:
1. The iconic Atlantis Hotel: The Palm.
2. The interior of one of the refurbished bedrooms.
3. Repainting of the building's façade is being undertaken via rope access.

Stefanutti Stocks Building develops

Northern Views residential estate in Pretoria

Source: Jaco Janse van Rensburg, Stefanutti Stocks Building Division quantity surveyor

In July 2016 the Stefanutti Stocks Building Division embarked on a residential development project that would see it fulfil both the client and contractor roles. The Northern Views Development, located in Elardus Park in Pretoria, saw Stefanutti Stocks undertaking the civil and building construction of 210 apartments, ranging from 70 to 78m^2 in size and designed in three-storey blocks.

Northern Views is situated in the heart of Elardus Park, and combines convenience, security and trendy finishes with an ideal location and easy access to a host of local amenities. "As this is our own development, we have had to wear both a client and a contractor hat," says Jaco Janse van Rensburg, Stefanutti Stocks Building Division quantity surveyor. "This results in juggling both viewpoints to ensure the best is done for the project, and the company, and the site team has really performed to meet the required completion date."

Feedback from the site team

The core team on site currently consists of sub-agent Johan Grobler, safety officer Kurt Beeton and general foreman, Ashley Petersen who has been with the project since it started in July 2016.

In late 2017, phase one consisting of 132 units was partially occupied by owners, which was a significant milestone and a highlight on this project. There was slight a delay, due to NHBRC certification, in starting phase two, however, the site team made good progress and remained on programme.

"The team has always worked to find solutions that would make this project not just a construction success but also a flagship development for Stefanutti Stocks," says Petersen. "Our group CEO Willie Meyburgh visited the site, and it was a great honour to meet him."

A healthy and respectful attitude to safety was nurtured across the site and contributed to a lost time injury frequency of zero on the project. The development is on schedule for completion in April 2019, and the aim is to sell out and transfer all the units by June 2019.

Stefanutti Stocks Building offers the traditional building market alternative procurement options including turnkey construction (design & build), equity participation (co-development) and early contractor engagement (buildability). All three options offer attractive benefits to investors, developers and clients as they address or explore different solutions to ensure that a project's requirements are delivered – innovatively, cost-effectively, safely, to a high quality standard, and on time.

Pictured are some of the 210 apartments inside the Northern Views residential estate.

SS Construções pioneers top-down methodology

and use of Kelly Bar system in Mozambique

Source: Luis Gaspar, SS Construções (Moç) Lda alternate director

The Anadarko Phase 2 construction project comprised of the design and construction of a seven-storey building in central Maputo, Mozambique. The client required the building to be completed in a twelve-month programme, which required strategic thinking to overcome some of the challenges presented to the project team.

These challenges included Mozambique's restrictive land laws; the proximity of the site to other buildings in the area (which meant that noise needed to be kept to a minimum and working hours were restricted to daylight hours); and the substantial scope of work that needed to be completed within a short timeframe of just twelve months.

"All land in Mozambique is state owned and leased from the government for a fifty-year period," explains Luis Gaspar, SS Construções (Moç) Lda alternate director. "The traditional method of using soil anchors, which would normally be placed on neighbouring land, would have resulted in delays as we sought permission from each affected neighbour – who would most likely consult their own engineers before granting us permission to proceed. This would have taken much more time than we had available."

SS Construções and its piling subcontractors evaluated several potential proposals which would enable it to remain on schedule while also minimising the impact on neighbouring properties. "This resulted in our employing an ingenious 'top-down' construction system, a methodology that would result in substantial saving on time – and a first for Mozambique," says Gaspar. The top-down system at the Anardarko Phase 2 project consists of a perimeter of sixteen-metre-deep concrete piles on three sides of the structure. The steep incline at the back of the building meant that no concrete piles were required there.

The final structure makes use of lateral support walls of bored piles in reinforced concrete and these piles must be braced in order to support the soil. To decrease construction time, SS Construções' engineers employed a concrete slab band at -2 level. This slab allowed contractors to continue building upwards while downward excavations were still underway, dramatically reducing construction time and the impact on neighbouring land.

"The piling itself was also a challenge, and a standard gear phase was used on the perimeter, whereas the Kelly Bar system was employed for the remaining piles," says Gaspar. "This is a first in Maputo, and a unique accomplishment for SS Construções." The only minor drawback to implementing the top-down approach was that the basement parking structure needed to be redesigned – the parking spaces needed to be adjusted to cater for concrete piles that were 200mm wider on each side.

Despite the short production timeframe and the use of new techniques, there were no safety incidents, and the project was completed on time. The top-down system has the potential to change the way that buildings are constructed in Maputo, especially for projects that have strict time considerations. "This methodology is equivalent in price to other techniques, however, drastically cuts down on building time," says Gaspar. "We are extremely excited at the potential this approach has, and are already implementing it on another one of our projects."

Captions:

1. The front façade of the Anadarko building, as viewed from the main road.
2. A rear view of the Anardarko building showing the parking levels and office floors.

Top-down construction methodology adopted for

multipurpose building in Maputo

Source: Luis Gaspar, SS Construções (Moç) Lda alternate director

SS Construções (Moç) Lda is currently constructing a multipurpose building for its client EMEM in Maputo, Mozambique. The project includes the construction of three underground parking levels, six floors of office space and ten floors of apartments, with two high-spec apartments per floor.

The project commenced in September 2018 and is scheduled to be completed in March 2020.

Top down system

The soils were contained through the installation of piles on all four sides of the building. In order to keep the piles from moving due the pressure of the soils, a top down system was used – this methodology was also implemented in order to cause as little disruption as possible within the congested neighbourhood. The building's piles were cast from the ground floor level and steel beams were left in the columns to support the slab cast.

"The resounding success of implementing the top-down system at our Anadarko project means that we are able to implement this system here with great confidence," says Luis Gaspar, SS Construções (Moç) Lda alternate director. Furthermore, the fact that this approach means that the contract does not need to encroach on neighbouring properties also allows SS Construções to start with the construction work at the outset. In April 2019 the piling and pile caps had been competed, and the construction team started casting the slabs on the -1 and -3 levels.

Both the interior and the exterior of the building will be completed by SS Construções, and most of the finishes are being imported from Europe. "The EMEM building, in particular the apartments, will be finished to a high quality and to the superior finishes required by our client," says Gaspar. "There are many apartments available in Maputo and EMEM would like this building to be set apart from what is currently on offer in the city – we aim to play our part in achieving this for them."

Caption:
The first slab being poured at the EMEM Building, with the piles visible at minus-three level.

Stefanutti Stocks completes further school infrastructure for Aga Khan in Mozambique

Source: Luis Gaspar, SS Construções (Moç) Lda alternate director

SS Construções (Moç) Lda has participated in various construction phases of the Aga Khan Academy, located on a 22-hectare site in Matola, Mozambique. The contractor completed the construction of the Aga Khan Academy junior school, junior library, basketball court and a sub-station in late November 2017, and in March 2018 commenced a further phase of the development. This phase incorporated the construction of two three-level student residences and ancillary works – with a scope of work that also included earthworks and the construction of the water tank building. Each dormitory has ninety-six beds for students, first aid facilities and eight apartments for teachers.

"We included construction solutions that are cost effective yet suitable for an educational institution – for example we incorporated Glass Fibre Reinforced Concrete (GRFC), which is not only lighter than conventional precast concrete, but also more durable." says Luis Gaspar, SS Construções (Moç) Lda alternate director. "We also appointed an external engineer to design the unique metallic roof structure, which also assisted us in keeping project costs down."

The project was competed at the end of March 2019, with zero lost-time injuries.

Caption:
An aerial photograph of two accommodation buildings at Aga Khan.

Mozambique team completes police station in Maputo

Source: Marícia Langa, SS-Construções (Moçambique) Lda junior engineer

The Chiango Police Station project in Maputo was completed on 22 March 2019 and included the construction of a new police station and a low traffic road. This social project, undertaken by SS-Construções and donated to Ministério do Interior: Comando da PRM-Cidade, is currently the most advanced police station in the city of Maputo as it houses several police departments under one roof (traffic, criminal investigation, attorneys and more) – a scenario that sets it apart from other similar establishments.

The completed Chiango Police Station.

Stefanutti Stocks and Siyozimela joint venture constructs Crossroad Precinct

Source: Phumulani Chili, Stefanutti Stocks Building KZN sub agent

Phoenix, Inanda, Ntuzuma and KwaMashu – known as the PINK area – have been identified as a critical development node that falls under the Urban Renewal Programme, which is intended to co-ordinate, facilitate and align development delivery as rapidly as possible. The Crossroads Precinct, including a taxi rank and Musa Road alignment, forms part of this programme (under the Go! Durban transport project) and construction thereof was awarded to a Stefanutti Stocks Siyozimela joint venture. Sizyozimela is an enterprise development partner to Stefanutti Stocks Roads & Earthworks, that undertook the bulk earthworks and road construction scope, with Stefanutti Stocks Building KZN undertaking the building works.

Small and emerging local contracting companies, from within the ward were brought on board, with most having to be trained, up skilled and familiarised with safe operating procedures that are required on construction sites.

The project commenced with bulk earthworks including 56 000m^3 of fill used to fill the chasm on site and bring the construction site to a levelled platform, before the building and the road works could commence. The building and road construction took place over the second nine months of the contract.

A total of 2 215 tons of asphalt were used for the construction of Musa Road and as part of the new taxi rank paving detail.

Building

The Crossroads taxi rank is one of the very first taxi ranks in the Durban area that comprises a fully built concrete standing structure with stands to accommodate more than fifty mini buses and five trading platforms.

The administration block comprises of an ablution area, store rooms, a boardroom and a kitchenette area. The trading stalls can house up to eighteen traders and comprise a further ablution block and two additional store rooms. An attenuation tank (for washing the taxis) with a grease trap pit, was also incorporated into the structure and a substation building was specifically built to provide power to the taxi rank and its infrastructure.

The tight programme and budget motivated the site management to split up the building works into two sections – firstly the Taxi Rank Platform and secondly the Traders Stall and Administration Block.

Taxi Rank Platform

The taxi rank structure consists of nine 2.5 metre x 1.5 metre x 6-metre-high shear columns, along with 0.8 x 0.3 x 6-metre-high bull nose columns, and a coffer slab. “The engineering consultant wanted the coffer slabs poured within nine hours of one another to avoid a cold joint developing – which meant that as soon as the team began to power float on the first half of the slab, the remaining half was being poured,” explains Phumulani Chili, Stefanutti Stocks Building KZN sub agent. “This saw us pouring 900m^3 of concrete within a twenty-four-hour period, while utilising just over four-and-a-half-thousand square metres of formwork on the taxi rank.”

The retaining wall encompassed a specialised unique panel (with recess designs inserted prior to casting the concrete) and a step down on every wall panel. “It was a late add-on to our scope of works and had to be built after the Administration Block was completed,” says Chili, “and in order to fast-track its construction, we used a combination of Trio and Domino formwork panels.”

The Crossroads Precinct project was successfully handed over before the programmed completion date and the combined construction team achieved a total of 263 949 lost-time free man-hours during the contract. “The key to the successful delivery of the project was the good relationship between all the teams involved. Also our safety achievement was only made possible through every individual on site putting safety first, and never just walking past unsafe acts,” concludes Chili.

The completed Crossroads Taxi Rank that will accommodate over fifty mini buses and five trading platforms.

The Stefanutti Stocks Building KZN team in front of the completed production facility.

Stefanutti Stocks completes

state-of-the-art print park for Redefine Projects

Source: Wikus du Plessis, Stefanutti Stocks Building KZN senior site agent

Stefanutti Stocks Building KZN completed a large format industrial printing facility in Cornubia (Durban) for its client Redefine Projects in February 2019. The facility, that was purpose-built for tenant Hirt & Carter on a 95 000m^2 site, was broken up into bulk earthworks and two construction phases – respectively eleven months and seven months long. Some of the project's highlights include:

Bulk earthworks

- The platform on the northern part of the site was built up by two metres using 28 688m^3 of imported material.
- 61 000m^3 of soft rock was removed from the southern side of the site.

Phase 1: warehouse & office block

Warehouse

- The structural steel subcontract for the 43 000m^2 production facility commenced early.
- The ten-metre high structural concrete columns were cast in one lift, with heavy duty (HD) bolts at the top of each column.
- Casting beds for the precast-concrete panel walls were able to start early, once the bulk earthworks were completed.
- The floors for both phases were FM4[1] grade.
- The production facility's ten machine bases (each twenty-metres by two metres by 800mm) were all piled and cast to FM2 grade[2] flooring. These bases are used for the printing presses.
- Epoxy finishes were specified for some of the printing areas in both phases.
- In addition to the tailor-made floors, the HVAC design was also tailor-made to meet the requirements of the different printing processes that will take place in the different areas across the facility.

Office block

- The 5 500m^2 office block started one month after the production facility's construction began.
- This very complex concrete structure includes six concrete meeting pods which are cantilevered out to give the impression that they are "floating" on the side of the building. These independent concrete structures are the only spaces in the office building that have ceilings.

1. *FM4 grade flooring is typically used for retail floors with applied screeds; and workshops and manufacturing facilities where material handling equipment lift heights are restricted to four metres.*
2. *FM2 grade flooring is typically used for buildings containing wide aisle racking with stacking or racking over eight-metre high, free movement areas and transfer areas.*

Epoxy finishes were required to some areas in the digital printing room.

- All other areas are exposed concrete soffits.
- The pods have a very high spec finish and require accurate and precise work to ensure they tie in with the façade and the surrounding brickwork seamlessly, while supporting the concrete structure around them.
- The entrance has two large seven-metre high, triangular wing walls.
- A structural steel bridge and staircase wrap around the concrete lift shaft internally.

Phase 2: structure

- The construction of the structure during phase 2 included all concrete works, structural steel and sheeting.
- Included in the scope were eighteen machine bases (each approximately twenty metres by two metres by 800mm), half of which were built on piles and the other half on rock.
- The external area totals 31 100m^2 of which 15 700m^2 is hardstand, 5 200m^2 is paving and 10 200m^2 is premix.

The design and construction of phase one allowed seamless cross-over into phase two of the project. "We had to consider future requirements whenever a design was finalised, so that our client could take over the premises, start operations and slowly ramp up operations," says senior site agent Wikus du Plessis. Integrated access and security systems across the production facility were well-designed and planned and executed during the different phases to make provision for the future.

"This was a complex and rewarding project to execute, and the strong relationships between the various stakeholders and team members were instrumental in our success and ability to deliver the project on time – in spite of some real construction challenges along the way," says du Plessis.

The construction of the intricate and unique production facility for Redefine Projects has been entered into the provincial Master Builders Association's Excellence Awards for 2019 and the entire project team anticipates that it will do well.

Enabling works for office and parking structure underway at

Newlands Cricket Stadium

Source: Dawid Leonhardt, Stefanutti Stocks Building Western Cape contracts director

Stefanutti Stocks Building Western Cape is currently undertaking the three-month enabling works contract at the Newlands Cricket Stadium in Cape Town. The project is being undertaken for Sanlam and Western Province Cricket Association (WPCA) and entails bulk excavation, lateral support, piling as well as dewatering for a 50 000m^2 office and parking structure at Newlands Cricket Ground.

Stefanutti Stocks Building Western Cape has worked extensively with the project's principal agent, quantity surveyor and other consultants on a number of other projects across the Western Cape including the Pep, Shoprite and Woolworths distribution centres, Junction Mall and at the D'Aria office complex, where Stefanutti Stocks is building three new office blocks. The enabling works at Newlands will be followed by a main building contract, for which Stefanutti Stocks hopes to be appointed.

The project's 45 000m^3 of excavation is taking place alongside the sports facility, and this requires co-ordination and detailed forward planning to overcome potential logistical challenges. While cricket matches are underway Stefanutti Stocks may not continue to work, and certain areas have to be made safe for public access on these days.

The site is nestled between the cricket ground and the main southern railway line, and lateral support is required along the railway boundary to support the six-metre-deep excavation. This necessitated the application for wayleaves from PRASA and the Stefanutti Stocks team had to undergo a PRASA-specific health and safety induction to be allowed to work in these restricted areas.

One of the eighty-metre-high floodlight masts had to be retained, and a lateral support solution, that provided for the retention of the mast's base was implemented. As a result the mast can now be permanently enclosed by the future buildings, avoiding the need to dismantle it, as well as the re-erection of a new mast.

The project is progressing well and with a lost time injury frequency of zero.

Bulk excavation underway with the rock-fill pioneer layer visible

Stefanutti Stocks - multidisc

Structures
- heavy industrial structures
- power projects
- mining infrastructure
- bridges
- water & waste-water treatment plants
- concrete rehabilitation

Marine
- jetties
- quay walls
- breakwaters
- scour protection and dredging
- caissons and pre-cast structures
- slipways and boat ramps
- marine furniture
- design and construction
- revetments and shore protection

Geotechnical
- geotechnical investigation & reports
- installation of different types of piles
- lateral support
- rock anchoring & shot-creting
- consolidation & other grouting
- diaphragm walls

Roads & Earthworks
- bulk earthworks
- road construction & rehabilitation
- crushing & screening
- asphalt manufacture & paving
- fibre-optic infrastructure
- dam construction
- mine infrastructure & development
- agricultural development

Pipelines
- large/small diameter welded steel pipe
- HDPE pipelines
- ductile pipelines
- oil & gas pipelines
- pump, mechanical & electrical installations
- *in-situ* concrete lining of pipelines

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Mining Services

contract mining
- open pit mine design, planning & optimisation
- fleet simulation & selection
- contract mining
- crushing and screening
- rehabilitation and closure

materials handling
- energy coal processing
- discard and fine coal disposal & recovery
- coal management

tailings management
- design solutions and construction management
- waste facility operations & management
- hydraulic mining and dredging
- rehabilitation & closure

Building Construction

- commercial buildings
- high-rise buildings
- industrial & service buildings
- hotels
- shopping centres
- social infrastructure
- mass housing
- township and residential developments

Mechanical & Electrical

- structural steel erection
- mechanical equipment installation
- pipe spool fabrication
- installation of process piping systems
- plant shut down & maintenance
- water treatment plants
- switchgear & motor control centre installation
- control system installation
- electrical field device installation
- field instrumentation installation
- commissioning assistance

United Arab Emirates

- general construction
- interior fit-outs & refurbishment

Stefanutti Stocks

excellence in execution

Stefanutti Stocks joint venture designs and constructs new

Body Shop for Mercedes Benz

Source: Ali Zayif, Stefanutti Stocks Building KZN contracts manager

The project – to design and construct a new two-storey Body Shop Production Facility and a three-storey office block for Mercedes Benz South Africa (MBSA) – commenced in May 2018 with a targeted completion date of 1 November 2019.

The Body Shop is one of four projects currently being undertaken for Mercedes Benz South Africa (MBSA) in East London by joint ventures including Stefanutti Stocks Building KZN, and emerging contractors Axsys Projects, Botani and Simunye. These include an automated storage and retrieval (ASRS) project; Building 34's Logistics Building – comprising demolition and removal of an existing building and its infrastructure, and the construction of a new 16 800m^2 logistics building and associated infrastructure; and the J-site logistics Building – comprising construction of a new 23 000m^2 logistics building with good connectivity for suppliers, a good connection to the assembly plant, and a new "Gate 2" entrance with external facilities and parking zones.

The Body Shop

The new body shop will have a higher capacity than the existing one and is being built for the production of the new Mercedes-Benz C-Class. The assembly shop will get three new lines and various initiatives will also make the production facility more environmentally friendly. Stefanutti Stocks, in joint venture with Axsys Projects and Simunye, has designed, and is constructing a two-level 45 700m^2 production facility extension and a connection to the existing building. The body shop structure is being constructed using large precast elements which include eighty-seven 51.5-ton primary beams, and three-hundred-and-twenty-eight 34-ton secondary beams.

The precast elements were manufactured about two-kilometres from site and had to be transported to site by a specialised rigging company. A further challenge was having to create a new route to access the site without going through an already busy plant. The JV designed and proposed a road crossing of the test track where Mercedes Benz tests its newly built cars, and MBSA accepted this proposal. The test track crossing operates a sophisticated system with sensors at the gates that will not allow persons or construction vehicles access to the track, while testing is underway.

The first floor level of this industrial production facility must accommodate a load of 37,5 kN/m^2 to allow for the production equipment. The floor was designed and is being built according to the technical specifications received from MBSA. The deck was constructed from reinforced concrete precast beams and panels which require no temporary support. The structural steel roof and sheeting was constructed prior to the construction of the deck on this level.

"We have completed the majority of the structural works as well as casting and placing precast beams and panels," says Ali Zayif, Stefanutti Stocks Building Division contracts manager. "The first floor slab and the surface bed on the ground floor are being cast, and the roof structure and the side cladding to the building are being completed." The installation of the services, such as HVAC, sprinklers, chill water lines, Pluvia system, and so forth, is ongoing and a critical activity within what is a tight schedule. "We need to hand over eighty per cent of the floor space with all services above the area to the MBSA on 1 July 2019," says Zayif. "It is a very challenging contract indeed and the construction team and the designers are working well together to meet our clients requirements."

An aerial photograph of the 46 000m^2 Body Shop Production Facility adjoining Mercedes Benz South Africa's existing building.

World-class E&I team works for
Pulp and Mining sector clients

By August Lipke, Stefanutti Stocks Electrical development director

The electrical and instrumentation (E&I) scope of a contract always finds itself at the tail end of a project. This can result in several challenges arising during the construction phase. These can include early mobilisation; a project budget that is almost exhausted when it comes to the E&I stage; delayed access; site congestion due to the presence of civil, mechanical and piping contractors working in parallel (and often with higher priority); design changes due to actual site runs, leading to scope creep; possible material supply challenges, and the list goes on… With all these challenges, the successful management and completion of the E&I scope of work requires the input of skilled and experienced construction teams and Stefanutti Stocks is proud to have these resources within its E&I division.

Some of Stefanutti Stocks E&Is recent project highlights include:

Sappi Saiccor Mill Expansion Project

The Unkomaas-based Sappi Saiccor Mill has embarked on a project that will increase its overall chemical cellulose production capacity from 780 000 tons/annum to 890 000 tons/annum. In preparation for this expansion, the mill's current woodyard is being upgraded including the installation of a new chipping line Number 7, a fully-automated chip storage, reclamation- and screening facility.

The project is being managed by Sivest. Stefanutti Stocks Coastal was contracted for the civils portion of the project and Stefanutti Stocks Electrical and Instrumentation (E&I) has been contracted for the electrical & instrumentation construction.

The E&I project scope includes tying into the existing plant; a new substation; material handling, electrical and control instrumentation equipment; lighting and small power installations; approximately 45 000 metres of cable; 6 500 metres of cable racking; and in excess of nine-hundred plant lights.

Stefanutti Stocks E&I employed local enterprises to perform some of the scope under its supervision including electrical contractor Adolphus Enterprise and four electrical suppliers; medical service provider Mbalemhlophe Health Services and Scaffold Training Group for working at heights training.

Other contract transformation initiatives included hiring Umkomaas community members and upskilling where possible. The site staff peaked at 207 employees of which 186 were from the local community comprising 62 skilled and 115 unskilled employees, six local foremen and three office-based staff.

The site's employees training included:

- certification in working at heights (157 employees),
- Six foremen participated in training for Hazard Identification and Risk Assessment (HIRA) and Legal Liability,
- certification as Cherry Picker Operators (4)
- certification as permit receivers (3)
- training as fire watchers (8)

Booysendal Greenfield Project

The Booysendal South Central Complex is a greenfield project situated 4,5 kilometres from the Booysendal UG2 North Mine. The mine is scheduled to achieve 220kt per month at steady, applying the low-profile mechanised board and pillar mining method. The project is being executed with DRA fulfilling the Engineering, Procurement, Construction Management (EPCM) role.

The E&I division's scope of work includes the on-site construction and erection of the electrical, control and instrumentation equipment and its associated infrastructure including approximately 6,4 kilometre of cable, 800 metres of cable racking and in excess of one-hundred-and-forty plant lights.

Pictured are cabling, cable racking and lighting undertaken by Stefanutti Stocks Electrical & Instrumentation at the Booysendal Mine (photographs 1 and 2 and at the Sappi Saiccor Mill expansion project (photograph 3).

SS Construções completes

Calambo Road for Vale Moçambique

Source: Nelson Rodrigues, SS Construções (Moç) Lda operational director

A grader and water cart working on part of the new stretch of road built for Vale Moçambique.

An aerial photograph showing a section of the Calambo Road.

SS Construções (Moç) Lda recently handed over the Calambo Road in Moatize located in Mozambique's Tete Province. The project was completed for repeat client Vale Moçambique, for which the business has already undertaken various contracts, including construction of utilities and buildings, a reject bin, upgrade to the main gate and sundry other works.

The roads and earthworks project saw SS Construções construct a new seven-kilometre-long mine road linking the current mine to the new concession, due to be mined as of mid-2019. The scope of work included 100 000m^3 of excavation, 200 000m^3 of fill material for the road bed, the construction of five major culverts and a drainage system with new jersey barriers along both sides of the full length of the road.

The project's remote location meant that access was a challenge and filling material for the road had to be procured as close to the mine as possible. During construction the needs of all stakeholders – including the local community, mining personnel and the construction team – had to be considered.

The road, that plays a strategic part in the expansion of the mine and links old and new areas, was handed over on 15 March 2019. The drainage works were concluded by the end of March 2019. "As is often the case when working in very remote areas, access to the outside world is difficult, and our planning and resilience played a large role in the completion of the road," says Nelson Rodrigues, SS Construções (Moç) Lda operational director. "Our team, led by senior contracts manager Paulo Silva, weathered the blistering heat and trying conditions to successfully conclude its first road project – all within a demanding six-month timeline, for a client determined to deliver on its expansion programme and consideration of the local community."

Oil & Gas division successfully

completes shutdown project at Sasol

Source: Raymond Johnstone, Megchem project manager and Deki Karadzoski, Stefanutti Stocks Oil & Gas operations manager

Stefanutti Stocks Oil & Gas completed an off gas re-routing shutdown project at Secunda, for Sasol's engineering consultants Megchem, in September 2018.

The project at Sulphur Recovery West (U018), Phase 1 and 2, entailed demolishing twenty existing 18-inch PRV discharge lines and two 78-inch carbon steel-header sections; re-routing twenty new stainless steel 18-inch PRV discharge lines to the two new 78-inch

Sasol's Nitro Dam Water Project
completed for PROXA Water

Source: Ian Graupner, Proxa Water project manager and Deki Karadzoski, Stefanutti Stocks Oil & Gas operations manager

The effluent dams at Sasol's Nitro Plant have been in operation for many years and the water contains fertilizer compounds. In an effort to leverage an existing opportunity Sasol requested proposals for the treatment of this effluent water, that provided a solution that would return the good quality water to the complex for re-use and enable the production of more concentrated streams of fertiliser-containing products.

The solution

A proposal, put forward by PROXA and Process Plant Technology, was selected by Sasol whereby PROXA provided the technology and plant design for the Ultra Filtration and Reverse Osmosis (UF/RO) portion of the project, and Process Plant Technology provided the technology and design for the thermal evaporation/crystalliser. PROXA undertook the engineering procurement and construction management (EPCM) of the project and awarded the structural, mechanical, electrical and piping (SMEIP) scope for the thermal plant to Stefanutti Stocks Oil & Gas.

The project was executed in two phases, the UF/RO plant being installed followed by the thermal plant.

The SMEIP construction scope of work included the installation of 180 tons of structural steel; 162 tons of mechanical equipment; 12 000 diameter inches of pipe spool fabrication and erection, including duplex stainless steel; ducting and the installation of sixteen kilometres of electrical and instrumentation (E&I) cables; and 3 000m^2 of insulation. The project is currently standing at more than 400 000 injury free hours covering twenty months of site work and is scheduled for completion in April 2019.

Caption:
Pictured is the thermal plant for which Stefanutti Stocks Oil & Gas has undertaken the structural, mechanical, electrical and piping (SMEIP) scope for its client PROXA.

stainless steel header sections, with ten discharge lines and one 78-inch header per phase. The scope also included the removal of four 60-inch "Y" pieces at the stack and their replacement with straight runs.

Challenges and accomplishments

Selecting an appropriate methodology for re-routing the 18-inch pipe spools presented some challenges, and required a project plan that was designed around the available installation time – which was 9.5 days on the critical path of the total shutdown. To enable ease and speed of installation two new 78-inch stainless steel header sections, already incorporating the required 18-inch branch tie-ins, were designed and fabricated.

The total scope of construction work was planned with no float in the 9.5 day programme, with no allowance for weld failures or repairs. Work was planned with precision and all shop fabrication, transportation, scaffolding and rack loading scheduled and coordinated.

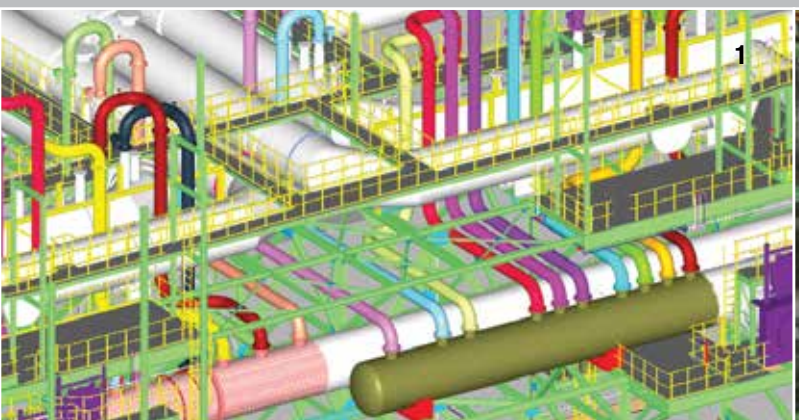
A number of highlights during the project included:

- 9 426 diameter inches of shop welding were completed pre-shutdown.
- Three 78-inch tie-in welds were completed during the shutdown.
- Approximately 14 tons of pipe supports were used.
- Drawings were made that supported accurate shop fabrication and prevented hold ups during installation on site.
- Accurate shop fabrication took place thereby preventing the need for any cuts, refits and re-welds.

A large part of the success of the project can be attributed to the incredible team work and the accurate and seamless communication flow in the lead up, and during the shut-down project.

Captions:

1. A design drawing showing one of two 78-inch stainless steel header sections, already incorporating the required 18-inch branch tie-in's, fabricated for the project.
2. The photograph shows the installed header section.



The Engen NMPP team sporting their Big Five safety awards.

Stefanutti Stocks Coastal marks a

quarter-of-a-century working within Durban's petrochemical industry

By Clive Reucassel, Stefanutti Stocks Coastal divisional general manager

In 1994, while trading as Stefanutti and Bressan (S&B), the company diversified its civils offering to incorporate the civil works side of the Durban petrochemical industry which was, at that stage, dominated by Roberts Construction.

The Fulton award winning Engen Process Control Building, Stefanutti Stocks' first petrochemical contract, undertaken in 1994.

Our first foray into this new field was for the construction of the main Process Control Building at the Engen Refinery in Durban. As a relatively unknown contractor and newcomer to this specialised market it took a lot of effort and marketing for S&B to be placed onto Engen's approved list of civil contractors…to be invited to tender…and to go on to successfully win the tender for the works.

Our successful delivery of the main Process Control Building – through a combination of a quality product (for which we received a Fulton Commendation Award), completed ahead of programme with a perfect safety record – led to an eight-year stay at the Engen Refinery. During this period the company completed the Reflex Expansion Project, the Sasol Wax Plant, the Clean Fuels Project, the VRU Project, three Refinery Shut Downs, and seven years as Engen's Civil Core Contractor.

In 1997 we were awarded the Blue Print expansion project for Blendcor (the Shell & BP Oil Blending Plant) in Island View. The project involved the expansion of the tank farms and associated infrastructure, as well as new warehouses and office block modifications. Whilst in Island View we secured most of the petrochemical civil work in the area, and over the next seven years we completed, amongst others, the Effluent Upgrade Project at the main SAPREF[1] fuel loading depot as well as its Island View satellite sites; upgrades to the Engen Lube Oil Blend Plant; two further contracts at Blendcor; the expansion at the Total Oil facilities; the reconstruction of Island View Berth 7 for SAPREF; and a tank farm for Van Ommeren Oil, which is now known as Vopak.

In 2001 we successfully tendered for the major SRU/Scot expansion project at SAPREF Refinery and whilst on site were awarded the CO Boiler Project and the modifications to the Shell Chemicals Plant, followed by the VRU Civil Works Project and portions of the Lion Project.

1. *SAPREF is the largest crude oil refinery in Southern Africa and is a joint venture between Shell SA Refining and BP Southern Africa.*

Our service delivery to SAPREF resulted in the completion of three challenging contracts on the SAPREF Tara Road transfer lines in 1996, 2005 and 2006.

The demand in the petrochemical sector reduced in the late 2000s, however, in 2012 Stefanutti Stocks Civils KZN (S&B was renamed in 2008) was awarded the Engen National Multi Product Pipeline (NMPP) Feeder Line Project in Island View. The Civils KZN division of Stefanutti Stocks (now known as Stefanutti Stocks Coastal) completed the project in true Stefanutti Stocks fashion, delivering a quality product, on time and with a perfect safety record. The tank farm construction for the Vopak Fuel 3 project and the SAPREF Berth 6 upgrade were also awarded during this period.

The recent resurgence within the petrochemical field has been led by the Coastal division's senior contracts manager Leigh Dressing, who began his work in the petrochemical industry in 2015 at the Omnia BTT Berthline Replacement Project (civil and structural works at the Bidvest Tank Terminals in Richards Bay).

In 2016 two substations were constructed at the SAPREF Refinery, and while constructing these two substations Leigh also landed the SAPREF Core Maintenance Contract – a twelve month contract that has been renewed in 2017, 2018 and 2019. The division was also awarded the civil works contract for the new H84 Reactor and we have recently returned to Island View the Vopak Growth 4 project, where we constructed the tank farm and based on our performance on this contract were awarded the ancillary works project. We are also currently working on a concrete hardstand for Total Oil.

The Stefanutti Stocks Coastal team is very proud of the fact that we have – over the past quarter-of-a-century – consistently continued to make good on our promise to deliver a quality product, on time and with a perfect safety record. The experience and expertise we put into play at our petrochemical contracts is an asset to our clients in the industry, and we look forward to strengthening our existing relationships well into the future.

One of two substations constructed for Engen Petroleum Limited at the NMPP site. The valve boxes were built off site and placed between existing structures.

The Vopak Durban Terminal Growth 4 Farewell Tank Farm Project site, where Stefanutti Stocks Coastal is undertaking the construction of the tank bases, manifold, bund walls and ancillary works.

Geotechnical design and construct project for

Swazimed completed ahead of programme

By Teboho Motaung, Stefanutti Stocks Geotechnical project manager

Stefanutti Stocks Geotechnical and Stefanutti Stocks Construction Swaziland have successfully completed a Continuous Flight Auger (CFA) Piling and Geotechnical Investigation Project for the Ezulwini referral hospital in Eswatini. Stefanutti Stocks Construction Swaziland, that was appointed for the earthworks, secured a variation order for the geotechnical works on the project, which it awarded to its sister company, South African based Stefanutti Stocks Geotechnical.

Project execution and duration

The geotechnical team was appointed in early December 2018. The actual piling works were set to begin in January 2019 with a completion date of 16 April 2019.

The geotechnical information that was provided at the tender stage was based on percussion drilling findings, provided by another contractor. “This approach only provides limited information with which to complete designs, and as a design and construct geotechnical team we carried out further ground investigations – in the form of auger trial holes and DPSH tests – in order to finalise and confirm our pile designs prior to starting with structural piling works,” says Teboho Motaung, Stefanutti Stocks Geotechnical project manager.

Thorough geotechnical investigations revealed that the piles needed to be installed deeper than initially anticipated, which saw the total amount of drilled metres increase from 2 087 to 3 706 metres. “In spite of this 77.6 per cent increase in scope, we still managed to complete and hand over the works earlier than the originally set completion date of 16 April,” says Motaung. “The urgency to get the building works started and ensuring Stefanutti Stocks maintains a healthy relationship with the client, saw us working weekends and extended hours to complete and hand over the works two weeks ahead of programme.”

Scope of works

The project scope of work entailed the installation of continuous flight auger (CFA) piles to depths of twenty-four metres with the following pile diameters:

- Seventy-one 450mm diameter CFA piles,
- Sixty-one 600mm diameter CFA piles, and
- Sixty-eight 750mm diameter CFA piles.

Project success and ingenuity

Soil investigation is a vital and necessary step in the construction process for piling works and relying on poor or previously conducted soil investigations can result in catastrophic failure of the super structure. “We have, on several occasions, found that characteristics of the in-situ soil-conditions vary significantly from what was envisaged at the tender stage. The additional geotechnical investigation we carried out before the actual piling works started was fundamental to the success of this project as it provided the precise information Stefanutti Stocks Geotechnical required to finalise and verify its designs,” concludes Motaung.

Caption:
An aerial view of the platform with Stefanutti Stocks Geotechnical's B170 piling rig and other construction equipment on site.

Geotechnical division completes piling project for **Mlalazi River Bridge**

Source: Marcin Szatkowski, Stefanutti Stocks Geotechnical site agent

Stefanutti Stocks Geotechnical has undertaken the piling contract for the Mlalazi River Bridge for the KwaZulu-Natal Department of Transport and ISF Civil Engineering, the main contractor appointed by the Department. The project commenced on 26 November 2018 and was completed in March 2019, in spite of a 200-metre change in position of the bridge, to a location where the geology did not match the original report provided.

The work methodology for the river bridge project was based on 900mm diameter temporary-cased auger cast in-situ (ACIS piles) and drilling in medium hard rock up to 25MPa. The design was based on the initial geotechnical report provided.

"We quickly realised that the in-situ substrata condition did not correspond with the geotechnical report provided," says Marcin Szatkowski, Stefanutti Stocks Geotechnical site agent, "and following rock compression tests, discovered that some of the rock was in fact very hard rock, testing up to 240MPa."

In response to this discovery Stefanutti Stocks Geotechnical proposed an alternative piling solution, more suitable to deal with very hard rock. It proposed percussion, or rota piles, as an alternate methodology as the original methodology of augering and coring in very hard rock would have impacted on the programme by two months. Percussion piling methodology is suitable to deal with very hard rock and impacted on the works by only an additional twelve days and the project was completed on 20 March 2019.

The piling scope included forty-two 900mm temporary cased piles and fourteen 610mm percussion piles as part of the variation order.

The team that completed the geotechnical works for this bridge has extensive experience in deep foundations for bridge structures and has, since 2015, worked only on bridge contracts. The team's portfolio includes piling for Kinini-Leselinyana and Zulu Bridges in Soweto, Johannesburg; the river bridge at Merry Pebbles, Mpumalanga; and the road-over-rail bridge in Saldanha Bay as well as for river bridges in Swakopmund in Namibia.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Captions:
1. Augering and excavating alluviums to reach the bed rock.
2. Coring R5 bed rock at the location of the bridges pier 2 in the river diversion.

Bridge rehabilitation underway on M2 for Johannesburg Roads Agency

By Carlisle Barker, Stefanutti Stocks Civil site engineer

Stefanutti Stocks Civils is currently rehabilitating two bridges on the M2 Freeway in the Central Business District (CBD) for the Johannesburg Roads Agency (JRA). The project came as a result of an emergency full closure (of both the east- and west-bound sections between the Maritzburg on- and off-ramps and the M1 at the Crown Interchange), as a result of the bridges lack of structural integrity. This comes as a result of a lack of maintenance as well as a considerable increase in road traffic since the bridges construction. The project commenced on 8 February 2019 and is due for completion in October 2019.

Traffic management

Traffic is being diverted through the centre of Johannesburg between the Selby and Kaserne bridges. Road closure signs and steel barriers have been installed and detour signs are displayed to divert the traffic as efficiently as possible through the city. Metro Police has been stationed on all the detour routes and closures to ensure the safety of all road users and other parties affected by the freeway closure.

Selby bridge

The layout of the Selby bridge superstructure consists of four single columns with tapering column heads that support a bridge deck to form a single leg table structure. The adjacent bridge decks are supported on the half-joints of the column bridge decks. Stefanutti Stocks Civils' scope for the Selby section of the project entails the emergency repair of the four columns, column heads and the bridge decks of the superstructure.

The consulting engineer for JRA (APC Oosthuizen) discovered that the degree of cracking evident in the structure (in terms of what can usually be expected from concrete) was irregular and fell very far outside of normal bridge deck behaviour. The inherent structural strength of the columns and column heads could therefore not be determined with any degree of accuracy. Further investigation revealed that the existing Alkali-Aggregate Reaction cracking (AAR) had worsened, due to the high levels of moisture in the concrete resulting from the high ambient temperature conditions and high rainfall levels. The effects of the moisture in the concrete resulted in the re-activation of the chemical reaction that causes the formation of the gel, that in turn results in the enlargement of aggregates and causes the concrete to crack.

The inevitable effects of the cracking would reduce the structural strength of the columns and bridge decks and the JRA determined that no reliance could be placed on the structural integrity of the bridge. As the load-carrying capacity of the bridge is primarily withstood by shear resistance, it was predicted that shear failure could occur and that the structure would collapse without any warning. The vehicular traffic was therefore removed from all four carriageways of this section, and emergency rehabilitation of the bridge commenced.

Phase 1: Demolition

Phase 1 of the project includes the construction of a jacking system to jack the adjacent bridge decks currently supported by the half-joints of the compromised bridge decks. Structural steel and jacks


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will prop up the adjacent bridge decks by approximately 500mm in order to separate and support the decks from the failing ones requiring demolition. The jacks will act as temporary columns carrying the dead load of the bridge decks that were previously supported by the four cracking columns. The removal of the live load on the bridge eases the ability of the jacks to support these decks. The jacking is currently underway and once completed, the four columns, column heads and bridge decks will be demolished using specialised techniques.

Phase 2: Reconstruction

Phase 2 of the project entails the reconstruction of the four columns, column heads and bridge decks, as well as the reconstruction of bridge elements in compliance with Committee of Land Transport Officials (COLTO) specifications. The half-joints will be reinstated and new Thorma bridge joints will be installed. New elastomeric strip bridge bearings will also be installed after the reconstruction of the bridge. The propped bridge decks, supported by the reinstated half-joints, will then be lowered into position and the jacking system removed.

Kaserne bridge

The design parameters, originally introduced during Johannesburg's gold mining operations, led to the Kaserne bridge's multiple-articulated statical system. This particular design demanded multiple expansion joints, none of which are waterproof. The bridge structure consists of hollow post-tensioned concrete boxes with short sided cantilevers that form the bridge deck width. The deck boxes are supported by three built-in columns that form a three-legged portal-frame structure. The deck boxes also extend beyond the three columns to form cantilevers that support the adjacent drop-in deck spans. The drop-in slabs of the bridge deck are supported by an obscure abutment and half-joints are located on the cantilever end of the first portal frame.

The drop-in deck slabs on the east- and west-bound carriageways are currently in failure at Kaserne, as the bridge decks are not adequately supported. The strength of the bridge deck supports is compromised, and the inherent strength of the bridge decks are declining. The slowly collapsing bridge has resulted in the sagging of the bridge decks, creating an indent in the road on all four carriageways.

The emergency remedial work at Kaserne is being undertaken to prevent the collapse of the bridge section that posed a threat to road users.

Stefanutti Stocks' scope includes the demolition of the compromised bridge decks and cantilever half-joints. This was recently completed, using specialised methods. The structural steel that is currently supporting the bridge decks will also be removed and disposed of.

The bridge's drop-in deck slabs will be reconstructed using two-metre-wide cast in-situ panels that will also serve as permanent shuttering and a 150mm-thick slab that will be cast in-situ. The half-joints will be reconstructed, and a new steel support structure will be installed beneath the new decks. The existing finger claw joints on the west abutment have been removed and the bridge elements will be reconstructed by installing double element Maurer claw joints on the east-bound carriageway and 300mm Thorma joints on the west-bound carriageway. New fixed, multi and uni-pot bridge bearings will also be installed.

Road sections on Selby and Kaserne will be resurfaced once the structures have been rehabilitated. The new and existing elements at both bridges will be treated with protective coatings to ensure the bridge elements are waterproof and to prolong the life of the new and existing concrete to prevent future collapse of the bridge sections.

Captions:

1. The drop-in slabs at the Kaserne Bridge are removed.
2. The jacking structures support the Selby Bridge.
3. The Stefanutti Stocks concrete rehabilitation team on site in Johannesburg.
4. Jacking operations underway.

Modern arch bridge for SANRAL nominated for Fulton Award

By John Woodburn, Stefanutti Stocks Coastal contracts director


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Stefanutti Stocks Coastal completed construction of the new Olifants River arch bridge for SANRAL in 2018. The new 166-metre long bridge with its 93-metre long arch, formed part of the N7 upgrade (from a single to a dual carriageway) in the vicinity of the Olifants River near Trawal Klawer. The road infrastructure upgrade contract also included the construction of a new road.

Arch bridges

The arch is an extremely efficient structural form and has been used for bridges for a very long time, with possibly the oldest known arch bridge still in use today being the Mycenean Arkadiko bridge built in Greece around 1300 BC. While most of the earlier arch bridges were constructed from stone, this bridge type is also suited to modern construction techniques and materials.

The Olifants River Bridge uses the ancient structural form in an innovative way, making use of modern materials and analysis techniques to provide an aesthetically pleasing structure. “It has some unique design features and construction techniques, and we believe that this together with the attention to detail, in both the design and construction, as well as the quality of the concrete finishes makes this bridge a testament to excellence in the use of concrete,” says Stefanutti Stocks Coastal contracts director John Woodburn.

The construction method adopted at the Olifants River Bridge is better known as the Cruciani system. This system consists of timber truss segments and was developed in the 1950s and mainly used in Austria for the construction of almost one hundred arch bridges. For spans such as at the Olifants River Bridge the segments are erected by crane and after construction is complete the falsework is removed and spoiled.

Arch springing point foundations

When masonry was the preferred material for the construction of arches, their shape had to be carefully chosen to avoid tension forces in the arch. A shape close to a semi-circle was found to be effective.

For the Olifants River Bridge, it had to fit the road alignment and the rise was therefore limited to around fourteen metres, which is only around fifteen per cent of the span. This means that significant moments are generated at the arch springing points. The arch could be reinforced to deal with these forces, but the forces had to be transferred to the ground through the foundations. The magnitude of the moments at the supports depends on the rotational stiffness provided by the supporting material (which is not necessarily elastic) and varies based on the loading.

Forces at arch springing points

A comprehensive geotechnical investigation found competent rock at the support locations. A weathered zone below the southern support influenced the design and called for two different conditions. An iterative process was followed, where the geotechnical engineers were provided with design loads, based on an assumed rotational stiffness, to model the rotational stiffness. The structural model was then updated with a revised stiffness until the results were close enough.

Arch falsework

A proposed construction methodology was provided as part of the construction drawings, however, it was Stefanutti Stocks’ responsibility to design and supply this portion of the works and it appointed BPH Engineers to design the steel structure to support the formwork during concreting of the arch. This structure had to comply with strict deflection requirements and they managed to limit this to such an extent during construction that no pour strips were required as foreseen in the drawings. A deflection of 85mm over the ninety-three-metre span was expected and five monitoring points were observed

carefully as the concreting progressed. The temporary support structure performed better than anticipated and a maximum deflection of 58mm was measured.

Temporary arch/sliding of the steel truss

The steel truss was designed to be able to support the concrete for the first arch, and then to be slid into a new position for the second arch. Prior to installation and sliding, all steel-on-steel sliding surfaces were coated with graphite grease to reduce friction and the subsequent sliding force required during sliding of the truss.

Ninety-five ton cylinder jacks were used to pull the arch to the second position and each cylinder was extended simultaneously. Stroke lengths were monitored to ensure cylinders were not over extended and movement at the centre and ends was monitored constantly as it was important to ensure the jacks were "pulling" the truss evenly. A pulling force of up to 90kN or 19 ton was required for the truss to be "pulled" into position from two locations at the end supports on the sliding rails.

The hydraulic jacks were then relocated from a transverse jacking orientation to end-to-end jacking, forcing the truss inwards to take up position under the new permanent arch.

Arch springing points

Even though three boreholes were drilled at each arch springing point foundation, the rock level was highly variable and unexpected foundation conditions were found at each position.

Northern arch springing foundation

When the foundation was inspected before concreting, a weathered zone was found just below the foundation level. This could result in unacceptable vertical deflection and the rock therefore had to be removed to the level of the weathered zone and replaced with mass concrete.

The level of the rock behind the support position also varied substantially and would not have been able to resist the expected loads. Additional horizontal load capacity was provided by means of a mass concrete support behind the foundation, tied into the rock by means of rock anchors.

Social upliftment

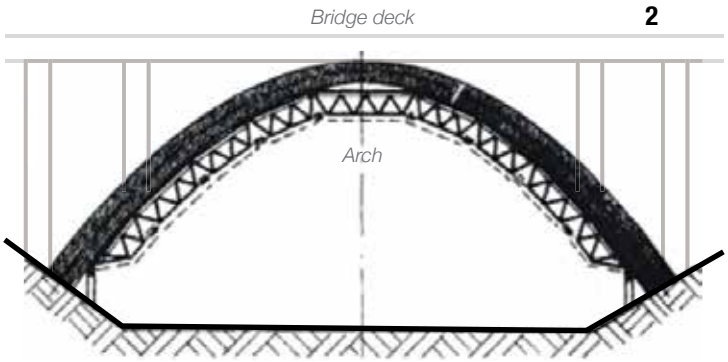
Stefanutti Stocks Coastal employed their entire unskilled labour force from the local community. "We embarked on a skills training programme over the duration of the project and after completion have left as many skilled people as possible behind, who we hope will be employed for future projects in the surrounding areas," says Woodburn. Clerical people, both wage and administrative, were employed from the community and of those employed many gained permanent employment positions and have moved to new projects along with Stefanutti Stocks. The ultimate silver lining was not only achieving the CPG target of a sixteen-million Rand spend in local employment, but more than doubling it with a total employment spend of thirty-three-million Rand.

It is always difficult to quantify the actual spend in the community, but it would be fair to say that the project supported all business sectors in the nearby towns – including plant hire, fuel supply, aggregate purchase, signage, transport and accommodation, and the list goes on and on – with additional millions spent supporting local suppliers.

"The joint efforts of all stakeholders, a combination of innovation in design and construction, and the extreme care taken with regard to details and concrete finishes resulted in an aesthetically pleasing structure that will leave a legacy behind that all who were involved in this project should be very proud of," concludes Woodburn.

Captions:

1. A present day photograph of the Arkadiko Bridge in Greece.
2. A diagram illustrating the Cruciani system, that was utilised for the arch of the Olifants River Bridge.
3. The temporary support structure designed by BHP Engineers for Stefanutti Stocks Coastal and erected on site in Klawer in the Western Cape.



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Stefanutti Stocks Coastal constructs advanced water treatment facility for Hitachi

Source: Brett Vermeulen, Stefanutti Stocks Coastal senior site agent

The advanced water treatment facility under construction on the Bluff, along the Durban shoreline.

In October 2018 Stefanutti Stocks Coastal began civil construction of a Remix Demonstration Plant, for its client Hitachi, at the eThekwini's central wastewater treatment works on the Bluff, a suburb located on the Durban shoreline.

The contract will see Stefanutti Stocks construct a 6.25Mℓ/d advanced water treatment demonstration facility that will utilise Hitachi's existing Remix system which combines direct potable re-use water with desalinated seawater and aims to accomplish a thirty per cent energy saving compared to existing desalination systems.

The purpose of this pilot facility is to prove the effectiveness, reliability and advantages of the remix technology to various stakeholders – including Hitachi, the New Energy and Industrial Technology Development Organisation (NEDO), the eThekwini Municipality and the public – before the municipality considers it as an option for large-scale commercial implementation.

Project scope

The project scope comprises all of the civil and marine works; the installation, testing and commissioning of all mechanical and electrical equipment (free issue from Hitachi); the procurement, manufacturing, installation, testing and commissioning of pipework, valves, cables and other ancillary mechanical and electrical infrastructure. "This multifaceted contract which is being undertaken for an international client, will be good exposure for our team and give us the opportunity to gain experience in all disciplines of construction and engineering associated with the systems and procedures being used on a facility such as the remix plant," says Brett Vermeulen, Stefanutti Stocks Coastal's senior site agent on the project.

Paperless document control

The Autodesk Building Information Modelling (BIM) system is being implemented to facilitate a paperless document control system. This system allows for complete document control of the project and connects the project teams (no matter where they are) and data in real time.

It is an industry norm for quality control on site to be via a hard copy document – which requires further administration in order to disseminate information to the project teams. The BIM system utilises a tablet, whereby a quality document, for example a pre-concrete inspection, is populated electronically. It is then signed off and uploaded to the BIM portal, allowing all project personnel immediate access to the information.

"We will have a number of specialist subcontractors on site undertaking the various disciplines that form part of the overall project," says Vermeulen, "and our effective planning and management of the various multiple disciplines taking place concurrently will play a large part in the success of our meeting our completion target of end February 2020."

Coastal division extends excellence in water infrastructure execution to City of Cape Town

Source: John Woodburn, Stefanutti Stocks Coastal contracts director

Stefanutti Stocks Coastal's Cape Town-based civils team kicked 2019 off by establishing its site at the Zandvliet Waste-Water Treatment Works in Macassar, where it will be upgrading the facility for the City of Cape Town.

The contract will run for over three-and-a-half years and provides for a new enlarged inlet works, two new screw-pump stations, four new primary settling tanks, a primary sludge pump station, a dewatering building, sundry holding tanks and pipelines as well as access roads and the installation of some minor services. An unusual element of the project is its extremely complicated inlet works, which is founded ten metres below ground level, and approximately seven metres below the water table.

"The success of the project relies on a fast start, and we aim to complete our earthworks before the imminent rainy season," says Woodburn. "In order for our concrete teams to be productive we will need to enable quick access to the different zones and mobilising the right people at the right time is a key factor. Fortunately, we have gained considerable experience in this sector, and are looking forward to continue contributing to South Africa's much-needed infrastructure delivery."

Stefanutti Stocks has, over the past decade years, participated in an impressive portfolio of water infrastructure projects across South Africa. Recent highlights in the Western Cape include the successful completion of the waste-water treatment works in Wellington and Paarl.

Coastal division constructs 70Mℓ potable water treatment

plant for Amatola Water

By Siyabonga Hlophe, Stefanutti Stocks Coastal senior site agent

The Nooitgedagt Coega Low-Level Water Scheme Phase 3 (NCLLS3) in the Eastern Cape is being undertaken by Stefanutti Stocks Coastal for client Amatola Water (AW). This Water Treatment Works (WTW) extension will increase the Nooitgedagt WTW from its present average daily capacity of 70Mℓ (peak 90 Mℓ/d) to an average capacity of 160Mℓ/d (peak 210Mℓ/d).

The project is funded by Amatola Water, as implementing agent for the Department of Water & Sanitation, with the beneficiary of the project being the Nelson Mandela Bay Municipality (NMBM). The project programme is just shy of two years after the project recommenced in mid-February 2019 and is due for completion in late March 2021.

An aerial photograph indicating the civil works that are being undertaken for the extension to the existing Nooitgedagt potable Water Treatment Works Phase 3.

The 45Ml/d reservoir being built at Olifantskop.

Some of the site team pose for a team photograph after the introduction of the 'Don't Walk Past' safety campaign.

The scope of the project includes:

- The construction of civil, mechanical and electrical works for the extensions to the existing Nooitgedagt potable Water Treatment Works Phase 3;
- The construction of a 45Mℓ reservoir at Olifantskop; and
- The cathodic protection and anode mitigation of steel pipelines as well as the rehabilitation of one-hundred-and-sixteen kilometres of pipeline.

This project is split across three locations (the Olifants Farm, Motherwell reservoir, Addo Farm) which are approximately fifty kilometres apart, thus requiring a lot of planning in order to optimise resource sharing and procurement control.

Empowerment

The contract specifies that Stefanutti Stocks Coastal spends a minimum of twenty-five per cent of the contract value with ninety-three local Emerging Micro Enterprises (EME). "We subcontract and manage these EMEs to ensure they produce good quality work, on time and safely, and when their scope has been completed, we assist them to improve their Construction Industry Board grading," says Siyabonga Hlophe, Stefanutti Stocks Coastal senior site agent.

Construction scope

"Constructing a 70Mℓ potable water treatment plant and a 45Mℓ reservoir is a complex undertaking," says Hlophe, "and as a team we are very fortunate to be exposed to such an interesting project where one learns about the entire water purification process - from inlet strainer to flash mixer, to settling tanks, to water filters, to backwash tank, to the pipeline, to the storage reservoir…and we are constructing each element that plays a part in this process."

Stefanutti Stocks Coastal is constructing the following infrastructure for the WTW:

- A low-lift pump station and a 23.6-kilometre-long rising pipeline that is 1.3 metre in diameter and sized for a transfer capacity of 120Mℓ/d (125m pump head).
- New balancing storage on the Olifantskop farm with tank water level (TWL) 150m above mean sea level (MSL).
- New reservoir, with 45Mℓ balancing capacity.
- 1.5 metre diameter 1.5-kilometre-long gravity pipeline up to Coega IDZ (Industrial Development Zone) off-take, followed by fourteen kilometres of a 1.3 metre diameter pipeline up to the Motherwell reservoir and a 1.5-kilometre 1.0 metre diameter pipeline up to the Coega IDZ boundary.
- A booster pump station at the Motherwell reservoir (with a maximum capacity of 42Mℓ/d by an 85-metre lift) which will divert and transfer "surplus" water along the Low-Level Scheme into the High-level Scheme, as and when required by operational demands.
- A booster pump station (with a maximum capacity of 90Mℓ/d by 96-metre lift) on the Motherwell/Chelsea pipeline system at Stanford Road. This will replace the existing Bethelsdorp booster pump station and will transfer water from the Oxidation-Reduction Potential (ORP) system into the Chelsea reservoir, as and when required by operational conditions.

"The project was temporarily suspended due to budget constraints, but it has shown positive signs of success from the outset. The quality of our work is of a high standard and we enjoy a good working relationship with our client and the engineers," says Hlophe. "Our safety standards and record has been exemplary, with a lost time injury free rate of zero over the twenty-one months the project has run to date."

A TZ reinforcement cage is lifted from the jig.

A birds eye-view of the repair and storage yard.

Stefanutti Stocks Civils precasts concrete towers for

Nxuba Windfarm

Source: Charles Letsoalo, Stefanutti Stocks Civils site agent

Stefanutti Stocks Civil has constructed the Nxuba Windfarm Factory in Somerset East (Eastern Cape) for its client Nordex Acciona Windpower, from where it is manufacturing the concrete towers for the Nxuba Wind farm being constructed adjacent to Eskom's Poseidon substation.

The project commenced on 24 September 2018 and will see 799 tons of precast keystone manufactured over a ten-month period. The contract requires different teams (reinforcement, insert, formwork and concrete teams) to work together in a synchronised manner and the factory has been set up to optimise production. "This project requires a high production output with no room for mistakes," says Charles Letsoalo, Stefanutti Stocks Civils site agent. "The self-compacting concrete must meet BSI[1] Standards, and we have to achieve a concrete compressive strength of 80 Mpa at twenty-eight days and 25 MPa at sixteen hours, or at eight hours with heat curing."

"We are making use of various types of technology to cater for, and optimise the different stages of the process," says Letsoalo. "This include rebar jigs, hydraulically operated moulds, self-compacting concrete, as well as having a fully-equipped concrete laboratory on site." Two sixty-four-ton gantry cranes have been installed at the factory, and the supply chain is being managed carefully to ensure the long lead time products being procured abroad, arrive prior to being required.

Project milestones

- The site establishment team was able to build and commission the batch plant, gantry cranes, tower crane and factory within a four-month period, in order for the production to commence in February 2019.
- The first keystone was cast by the production and quality team on 14 February 2019 and signed off by the client.
- Currently the team is casting four keystones per shift.

"Our continued success depends on the daily co-ordination of a number of factors, including continuous production and quality management, continued management of our supply chain, as well as ensuring that the synergy we have achieved between staff, the workforce, subcontractors and the community is maintained," concludes Letsoalo.

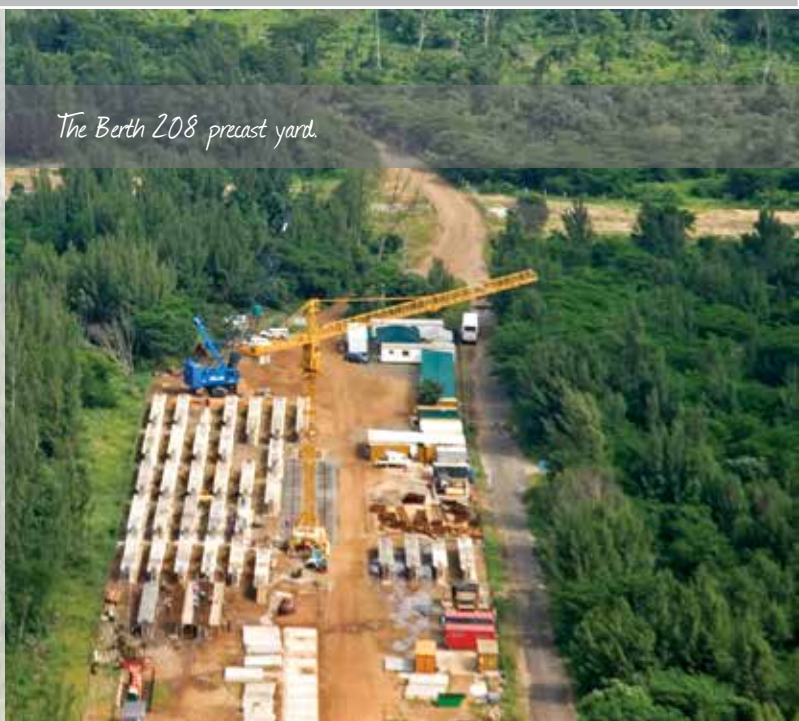
[1] British Standards Institution

Precast Yards

In addition to utilising precast concrete on its projects Stefanutti Stocks has also established a number of precast fabrication yards if and when required, for example, for the construction of Transnet's water-based Chemical Berth 208 it constructed precast planks and seventy beams, ranging between twenty to twenty-five metres and weighing up to 67 ton. Over seventy-one thousand F-shaped barriers and bridge parapets were manufactured for South African National Road Agencies Limited in the lead up to 2010 and more recently the company has established a keystone manufacturing facility for Nxuba Wind Farm in the Eastern Cape.

In some cases, when working abroad, precast work is done in South Africa and shipped abroad, as the quality of concrete available in the country is often not up to required standard. Examples of this include the precast concrete trough beam sections and precast slabs used in the Malongo Dock repairs and extensions undertaken in Angola. At the Alufer Mining contract in Guinea a precast yard was established to manufacture precast items for the berthing structure including precast concrete beams and deck planks, as well as 220 precast blocks that were stacked on top of one another to create the quay wall.

The Berth 208 precast yard.



A trip down Memory Lane
– precast concrete


1

2


3

Integrating the traditional construction methodology of casting concrete in-situ and the use of precast construction can reduce construction time, as well as contribute to the aesthetics of a finished structure. Its many advantages have motivated Stefanutti Stocks to utilise precast concrete elements across a large number of structural construction contracts for various industries. It is durable and versatile, offers more control over operational activity, has less of an impact on its surroundings while also contributing to a cleaner and safer working environment on site. The placing of precast units (culverts, beams, planks, columns, panels, sleepers, tunnel sections, and so forth) often requires heavy lifting or hoisting equipment or systems.

A number of the company's award-winning projects were specifically recognised for the innovation provided by the use of precast technology. These include:

- A patented precast concrete tunnel lining system implemented for the access decline shaft (Nchwaning No 3) at Assmang's Black Rock Mine in the Northern Cape. The Fulton Award winning precast lining system immediately provided permanent support, offering a stable, sound structure that protected the workmen placing the elements (see photo 2).
- At the Fulton Award winning Majuba Cooling Tower contract the installation of precast A-frames (massive concrete precast columns and beams erected with a hoist system) contributed to the project being completed one year ahead of schedule (see photo 3).
- The installation of a precast dry concrete chamber (Nick Dekker's Dry Chamber) at Roodeplaat Dam resulted in the award of the South African Institute of Civil Engineers first SMART award for innovation and lateral thinking.
- The Fulton Award winning twenty-eight storey Fairscape Tower in Botswana comprises of four-hundred-and-fifty triangular 'diagrid' precast concrete units. It is the first building in Africa with such a façade and to have used precast concrete as a structural element (see photo 4).
- The multiple award-winning Horizon Towers dominate the Maputo skyline with clean lines of concrete and glass facades mimicking the rippling shape of the nearby waves. In order to meet a very tight construction programme the curved concrete balustrades to the slab edges were precast.
- The Shondoni precast coal bunker comprises 491 precast panels, the majority of which were placed on the sloping and vertical wall units by rope-access teams. This method reduced the installation programme by a third and the project received a Fulton Award commendation in 2015 (see photo 1).
- The OR Tambo Gautrain station's precast concrete elements include five-ton struts and 20-ton slabs and balustrade walls. This project utilised the largest crane in Africa.

Other transport infrastructure projects that have utilised precast elements include the Moss Kolnik bridge where the abutments and piers are founded on precast piles driven to estimated depths of around eighteen-metre-deep; the N3 Hammarsdale Bridge decks each comprising twenty-three 37-ton precast beams, which made it possible to erect the structure with only minimal disruption to highway traffic.

The beautiful pedestrian bridge at the University of Johannesburg was constructed in 2006 and its two 120-ton precast decks were cast on the ground next to the road, before being lifted into position onto the supporting piers by a 550-ton mobile crane. Constructed over a decade later the Ekurhuleni pedestrian bridges included the use of precast concrete and structural steel elements components – although the unusual, asymmetrical shapes of the precast columns made them more difficult and technical to install, this method was more efficient and cost-effective than conventional in-situ concrete casting.

Time. Convenience. Aesthetics. Safety. There are many reasons to use precast methodology which allows for out-of-the-box, lateral thinking and still has the potential to offer ground-breaking, innovative engineering solutions in an age-old industry.


4

KZN Building team

knows their status!

The Stefanutti Stocks Building KZN office team with (Siven Naidoo) pointing to the writing on the back of the T-shirt. On 7 December 2018 (World Aids Day) all of the divisions staff members, both on site and in the office, were presented with a T-shirt and attended an address by Hillcrest Hospital nurses explaining the importance of knowing your HIV status.

Stefanutti Stocks team finishes

eleventh in KAP sani2c Race

Source: Hendrik Bester, Stefanutti Stocks Building KZN Site Surveyor

The 2019 KAP sani2c Race is the largest mountain bike stage race in the world, with three versions of the event running over five days in May. This year Hendrik Bester, site surveyor at Stefanutti Stocks Building KZN and his brother, Burger, wore the Stefanutti Stocks colours as they participated in the 265-kilometre-long race starting in the majestic mountains of Sani Pass, through the Southern Drakensberg, and on to the South Coast shores at Scottburgh Beach.

The brothers did the company proud by finishing eleventh overall, in a field of 858 finishers who participated in The Race, from 16-18 May this year. “The weather was perfect, and conditions were great for some fast and furious racing,” says Bester. “Admittedly, after seeing the starting line-up we thought it would be a huge task to attain our race goal of getting on the podium as veteran men but we focused on our own riding and the factors that we could control, such as cleaning our bikes, staying well-hydrated, eating and resting after finishing a stage.”

Stage one was a total of 82.3 kilometres long with an elevation gain of 1 476 metres. The team finished this stage in three hours and seven minutes, thirteenth overall and was the fourth veteran team. Stage two saw the brothers complete the 92.45 kilometres and 1 925 metres of elevation gain in three hours and fifty-three minutes. They finished thirteen overall and fourth vets’ team again but were now third vets overall as stage one’s third vet team had lost about forty minutes due to punctures. The third and final stage (85.3km and 1 120 elevation gain) saw the team pushing hard to finish in three hours and one minute – four minutes ahead of their direct competition, and fast enough to stay in third position in the veteran’s category.

“We completed the two-hundred-and-sixty-five-kilometre race in a total of ten hours and two minutes and are elated with our third place in the veteran’s category and 11th place overall,” says Bester. “We had a great race, we pushed each other like only brothers can do, and everything worked out well. I am really thankful for the support from our family, friends and my colleagues at Stefanutti Stocks!”

The veteran men’s podium, with Hendrik and Burger Bester in third place.

Hendrik and Burger Bester at the start of Stage 1 at the Glencairn Farm.

Eswatini team mobilises in support of epilepsy

Source: Thandiwe Hlatshwayo, Stefanutti Stocks Construction Swaziland director

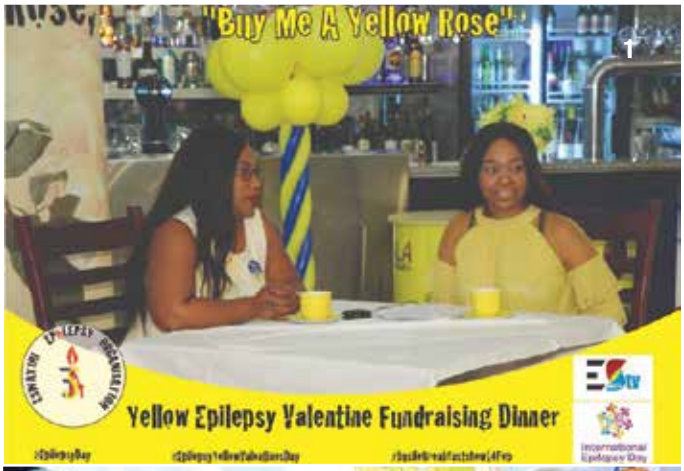
Stefanutti Stocks Construction Swaziland sponsored the twenty-one kilometre charity half marathon as well as four water points for the different races (21km, 12km, 5.5km and 3.3km). The marathon took place in Sikhuphe, where the company built the King Mswati III International Airport between 2009 and 2014. A number of Stefanutti Stocks athletes also participated in the various races, entering for the distances with which they felt most confident to run.

The "Yellow Marathon" was organised by the Swaziland Epilepsy Organisation which has the mandate of improving the socio-economic status of people with epilepsy and disability. A few Stefanutti Stocks delegates attended the "Yellow Dinner" held on 14 February 2019 for the purpose of fundraising and to launch the half marathon event. Valentine's Day was dedicated to persons suffering from epilepsy and was commemorated with yellow roses. "We felt it was an initiative worth including in our corporate social responsibility programme this year," says Thandiwe Hlatshwayo, Stefanutti Stocks Construction Swaziland director. "Epilepsy is a very serious chronic condition and there is a glaring need to raise awareness to avoid discrimination and marginalisation of both those who suffer from it, as well as those who are affected by it."

Official statistics in Swaziland reveal that:
11.22 per 1000 people live with epilepsy; and reported cases from 2005 to 2016 indicate a dramatic increase with 4 132 cases reported in 2005 compared to 20 896 cases reported in 2016. These numbers are only from diagnosed individuals and are populated from public health facility registers, meaning that the numbers could be higher and on the increase if one takes into account that many cases are diagnosed by private doctors.

"For a very long time attention has mainly been given to HIV/AIDS, diabetes, tuberculosis, and so forth," says Hlatshwayo. "Conditions such as epilepsy and prostate cancer are often overlooked, and as there are members within our community – both in the workplace and at home – who are affected, we felt that it is of paramount importance that we support this initiative."

Captions:
1. Thandiwe Hlatshwayo being interviewed live on the Swazi TV Breakfast Show about the initiative and encouraging other companies to participate.
2. Billy Howes is seen here after completing the twelve- kilometre race.
3. The youngest finisher in the 3.3-kilometre race.
4. Stefanutti Stocks' safety manager Dinize Wilsch being interviewed after running the twenty-one-kilometre race.
5. Competitors set off at the start of the fifteen-kilometre race.
6. The Stefanutti Stocks team consisted of director Billy Howes, contracts manager Velaphi Mabila and his wife, director Thandiwe Hlatshwayo and the Hlane Member of Parliament Mr Mduduzi Magagula.



Construction & Mining Business Unit

Managing director: Derek du Plessis
Tel: +27 11 552 4200

Divisions:

Roads, Earthworks & Pipelines
South Africa - managing director: Julian Dovey
Tel: +27 11 552 4200
E-mail: earthworks@stefstocks.com
Capabilities:

- Bulk Earthworks.
- Road construction and rehabilitation.
- Crushing and screening.
- Asphalt manufacture and paving.
- Fibre-optic infrastructure.
- Dam construction.
- Mine infrastructure and development.
- Township infrastructure.
- Asphalt paving manufacture.
- Chip and spray seals of bituminous products.
- Slurry seals.
- Demolition.
- Directional drilling.
- Landfill construction and blasting.
- Large/small diameter welded steel pipe.
- HDPE pipelines.
- Ductile pipelines.
- Oil & gas pipelines.
- Pump, mechanical & electrical installations.
- *In-situ* concrete lining of pipelines.

Mining Services
Managing director: Ian Ferguson
Tel: +27 11 552 4200
E-mail: miningservices@stefstocks.com
Capabilities:

- Design and construction.
- Operations & management of tailing facilities.
- Hydraulic mining.
- Open pit contract mining.
- Mine development and planning service.
- Materials handling.
- Crushing and screening.

General Contractors:

Stefanutti Stocks BOTSWANA
General manager: Shaun Cross
Tel: +267 397 4773

Stefanutti Stocks SWAZILAND
Managing director: Billy Howes
Tel: +268 518 5006

Stefanutti Stocks ZAMBIA
Managing director: TBC
Tel: +260 211 285623/4

Stefanutti Stocks WEST AFRICA
Managing director: Michael Welsch
Tel: +27 83 444 5075
General contracting capabilties:

- Civil works including water treatment works, reservoirs, bridges, among others.
- Airports.
- Commercial, light industrial (eg factory shells) and heavy industrial (eg. sugar mill infrastructure) buildings.
- Agricultural land development.
- Bulk earthworks.
- Road construction & rehabilitation.
- Dam construction.

Stefanutti Stocks Civils & Coastal
Managing director: Matthew Horwill
Durban: +27 31 700 1416 | Johannesburg: +27 11 571 4300
Cape Town: +27 21 386 2610
Capabilities:

- Heavy industrial plants, i.e. mining infrastructure, process plants, factories.
- Various power generating facilities.
- Marine construction.
- Dams, concrete canals and reservoirs.
- Slipforming, hydraulic lifting and incremental launching of structures.
- Construction of a broad range of bridge types.
- Effluent, water- and waste-water treatment plants.
- Precast and hybrid concrete structure construction.
- Concrete and general structural rehabilitation, concrete repair and waterproofing.
- Emergency construction and shut-down projects.
- Pre-construction engineering support and assistance.
- Various construction execution models, including:
  - Conventional tendering;
  - Multidisciplinary, design and construct;
  - LSTK and EPC contracts;
  - Collaborative project execution; and
  - Management contracting.

Stefanutti Stocks Geotechnical
Director: Shaun Butler
Tel: +27 11 571 4300
Capabilities:

- Geotechnical investigation, lateral support and construction of various piled foundations.

Mechanical & Electrical Business Unit

Managing director: Vince Olley
Tel: +27 11 820 4600

Divisions:

Mechanical & Piping - Mining Infrastructure:
Managing director: Marius Botes
Tel: +27 11 820 4600
Capabilities:

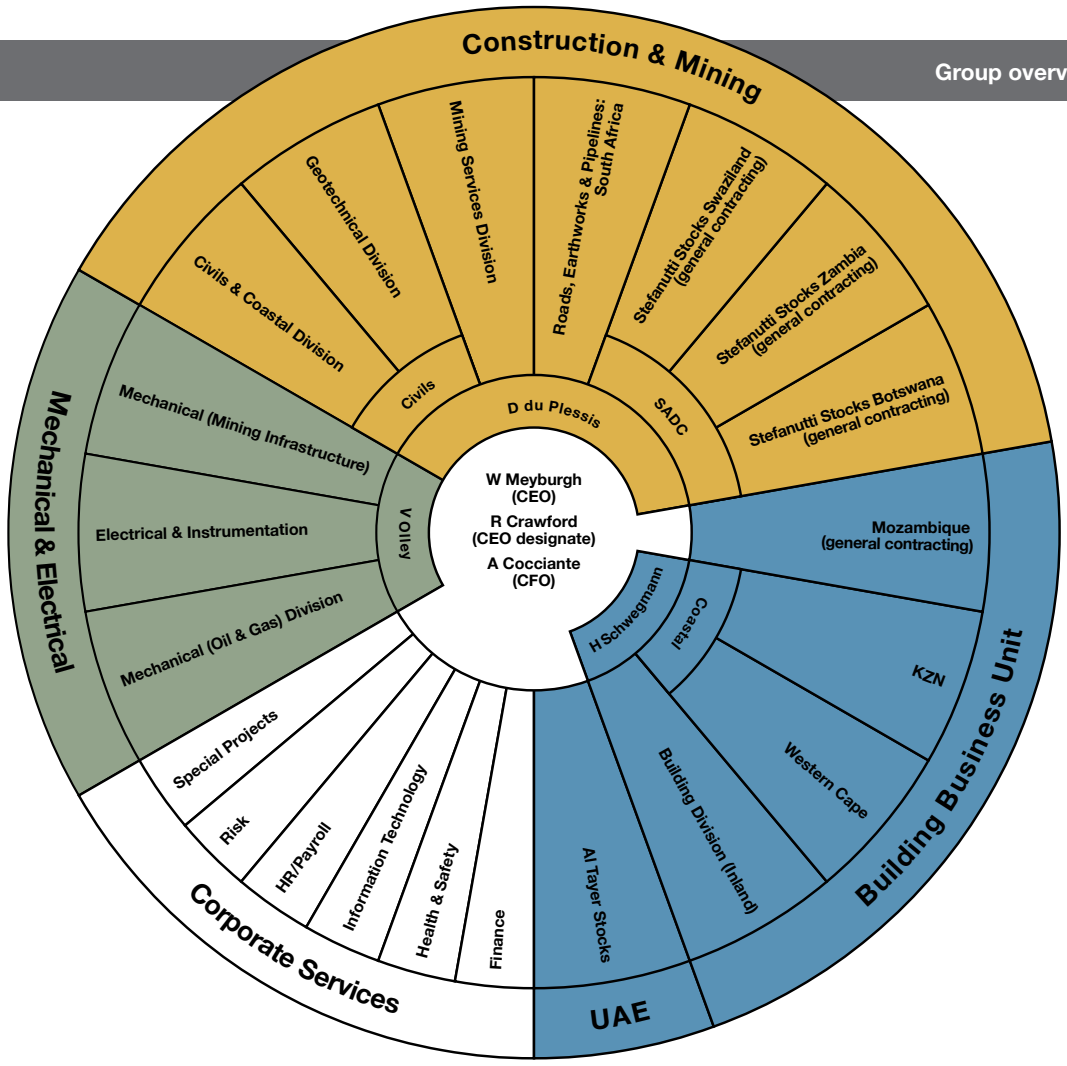
- Supply, fabrication and erection of steelwork, plate work, tanks and conveyors (on-surface & underground).
- Supply, installation and corrosion protection of piping including overland lines, pump stations, plant piping and high & low pressure lines (on-surface & underground).
- Installation of mechanical equipment including pumps, thickeners, flotation cells and stacker reclaimers.
- Supply and installation of patented high rate clarifier and sand filters.

Electrical & Instrumentation:
Managing director: Marius Botes
Tel: +27 11 820 4600
Capabilities:

- Electrical supply, installation and commissioning.
- Instrumentation supply, installation and commissioning.
- Maintenance.
- Sub-stations and switchyards.

Mechanical & Piping - Oil & Gas:
Managing director: Jose Faria
Tel: +27 11 820 4600
Capabilities:

- Structural steel erection.
- Mechanical equipment installation.
- Pipe-spool fabrication.
- Installation of process piping systems.
- Shut down & maintenance.
- Painting, insulation and scaffolding.



Building Business Unit

Managing director: Howard Schwegmann
Tel: +27 11 820 4600
E-mail: building@stefstocks.com
Capabilities:

- Commercial buildings.
- High-rise buildings.
- Industrial & service buildings.
- Property development facilitation.
- Hotels.
- Healthcare facilities.
- Retail shopping centres.
- Township and residential developments.
- Refurbishments.
- Schools.
- Mass housing, low-cost/affordable housing.
- Community Residential Units (CRU) and co-operatives.
- Social infrastructure.
- Specialist fit-out.
- Equity participation.
- Turnkey.

Divisions:

Building Division
Managing director: Dietmar Scriba
Tel: +27 11 820 4600
Building Western Cape
Managing director: Mauro Donato
Tel: +27 21 386 6336
Building KZN/Eastern Cape
Managing director: John Dorning
Tel: +27 31 700 1416
Building Africa (SADC)
Mozambique - managing director: Lucas Labuschagne
Tel: +258 21 471 604/5/6

United Arab Emirates

Al Tayer Stocks
General manager: Roy Blackman
Tel: +971 4 503 4888
Capabilities:

- Interior fit out and refurbishment.
- General construction.
- Residential buildings.
- Retail developments.
- Office accommodation.
- Hotel construction.
- Leisure facilities.

Multidisciplinary construction group **Stefanutti Stocks** undertakes projects across South Africa, sub-Saharan Africa and the United Arab Emirates. We are committed to achieving nothing less than our mission of **excellence in execution** across all of our projects.

Our divisions undertake multidisciplinary construction contracts for the following sectors: Building; Bulk Earthworks & Geotechnical; Energy Generation; Industrial Plants, Oil & Gas; Contract Mining & Mining Infrastructure; Transport Infrastructure; and Water, Sanitation & Pipelines.

if you can dream it, we can construct it

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excellence in execution