

## Arrested on the N11

by Don Hugo



In 2010, SANRAL appointed **hho** to upgrade the N11 Section 10 from Middelburg to Loskopdam (54km). The construction was broken into two contracts, with the second of the two contracts currently nearing completion.

This contract included the excavation of 7 major earthworks cuttings in the scenic Kranspoort Pass, which allowed for the widening of the existing pass to four lanes and included geometric improvements in order to eliminate some of the sharper bends.

The route is a strategically important one as it links Middelburg with other key mining centres and is also part of the transport route between Durban and Beit Bridge. As such, the road traditionally carries a high volume of commercial and abnormal load truck traffic. The pass is about 4km in length with sustained grades of about 9%. Historically, there have been a high number of 34 tonne side tipper truck runaways, often resulting in fatal accidents.

As part of the upgrades, two arrestor beds have been provided in the pass for use by runaways. Before the road was officially opened or handed over, the arrestor beds had been tested. As can be seen on the photograph, the arrestor beds work.

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## Message from the CEO

2017 has been an eventful year for **hho**. It is not every year that you get to rebrand, turn 90 years old and successfully transform into a majority black owned company. Amidst political uncertainty, a recession and a drought in the Western Cape, we at **hho** have undergone a transformational year, which we hope will bring sustainability, resilience and significance to our business.

We started 2017 by asking ourselves a question: Why do we do what we do at **hho**? Companies and their employees that consider why they are doing what they are doing first, before they consider what and how they do it, are the most successful companies in the world.

Our corporate response to this why question is as follows: "We believe that we need to make a positive impact to address the injustices of the past, inefficiencies in our existing infrastructure systems and the total lack of infrastructure in communities. In doing so, we believe we can contribute towards economic growth, access to opportunities and a greater quality of life. We believe we have a significant role to play in nation building and making a positive difference in society."

We then went in search of our brand essence: "Every aspect of our work is meticulously thought-through to achieve the best possible solution for our clients, the communities they serve and the people of **hho** who are worthy of our honesty, integrity, respect and compassion. When we partner with our clients, everything is considered."

We certainly hope we can live up to this mantra and serve our clients and our communities to the best of our abilities.

Ninety years ago John (JC) Hawkins founded his private practice on the 5th floor of the National Building on the corner of Market and Simmons Streets in central Johannesburg and called it "JC Hawkins Civil Engineering Practitioner".

It was in 1950 that **hho** was formed when Bob Hawkins and Dryden Osborn joined JC as partners. Ninety years later we continue the proud tradition and culture that embodies our founders.

In March 2017, we successfully transformed **hho** into a majority black owned company, all of our black directors and shareholders being "home grown" employees of the company. Naseema Ebrahim and Makotsene Mukwamataba became **hho**'s first female directors. Currently BBBEE Level 2, we strive to be Level 1, through our internal empowerment policies.

In August 2017, we successfully rebranded the company, dropping the Africa, and introducing an iconic and fresh **hho** logo. The rebrand celebrates the successful transformation of our company. We rebranded to give ourselves a fresh feel and a new start. We rebranded as we wanted a legible, strong, clear and determined logo that will give us prominence, position and presence in the marketplace. Through it we hope to improve our brand strength, our markets and hence our sustainability. We are now **hho**, no longer with continental hopes, but international ones!

Looking ahead, South Africa and the world at large, face many infrastructure challenges. In the Western Cape, we face a water supply crisis and nationally we face a public transport crisis. Basic housing, water supply, sanitation and surfaced roads also remain major challenges. We at **hho** possess all the skills needed to address these infrastructure challenges.

Thank you all for your support in 2017. May you all have a blessed festive season and we wish you all the best for you and your families for 2018. We look forward to partnering with you in 2018, once we have all had a good rest and time to relax on the beach!

Yours sincerely  
André Frieslaar



**hho** staff from across the country gathered in Cape Town on 24 August 2017 to host our clients, colleagues and business associates to launch **hho**'s vibrant new brand and to celebrate 90 years in business.

Photo courtesy A&R Photography

## Century City Square Wins SAPOA Property Development Award

by Fred de Villiers



Century City Square, the new all-green commercial and hospitality hub of Century City, received the prestigious SAPOA Property Development Award for Innovative Excellence in the mixed use category at the 2017 SAPOA Convention in Cape Town on Thursday, 22 June 2017.

The R1 billion development has also been awarded a 4-Star Green Star – Custom Mixed Use Design rating by the Green Building Council of South Africa. It was the first development in the Western Cape to be awarded this rating and only the second in the country.

**hho** congratulates our client, Rabie Property Group, and is proud to be part of the team that delivered this project. **hho**'s detailed planning and careful consideration delivered the excellent engineering infrastructure (roads, canals, services and bridges) that underpin the development and continue to contribute to its success.

From an engineering perspective this has been a signature landmark project. It is a pleasure to see a highly successful, quality product being appreciated by our client and the general public. This project has been extremely well received, and proves the value of detailed planning and careful consideration.



## Corporate Social Investments (CSI) Donations

Stacks of stationery bearing our old branding needed to find a home. Two organisations who welcomed contributions were the Mary Harding School for the Intellectually Impaired in Athlone, and Beautiful Gate in Philippi East, who provide after school academic support for primary school children.



Fred de Villiers and Stef Naude with Cindy Duvel from Beautiful Gate

## Upgrading Kommetjie Road & Ou Kaapse Weg

by Evan Bredekamp

Photos courtesy of Ian McDonald

In December 2015, the City of Cape Town adopted its R750m Congestion Management Programme to identify and address key high-congestion areas within the City. One of the areas identified was the Ou Kaapse Weg/Kommetjie Road corridor.

The centre of gravity of the overall site is at the southern end of Ou Kaapse Weg where it meets Kommetjie Road in a part of Cape Town colloquially known as the Deep South.

The intersection of Ou Kaapse Weg and Silvermine Road located further north along Ou Kaapse Weg, will also be upgraded as part of the project. This area borders on ecologically sensitive property managed by Table Mountain National Park.

The construction contract for this project was awarded to Martin & East in October 2016 and they are programmed to be on site for the next 24 months to November 2018. **hho** staff on the ground are Ian McDonald and Vuyani Mvotho.

During the planning stages of the project, a large number of medium voltage and high voltage electrical cables were identified for potential relocation. However, it was only once the contractor was established on site, that the full extent of the cable relocation works became apparent. The bulk of the cables have now been relocated, but this unfortunately has resulted in a 4 month delay to the start of the roadworks.

Bulk earthworks commenced at the end of June and work on the new road widening areas has progressed to the stage where the first of the imported structural road layers is being placed.

Ductile iron pipes for upgrading of the water supply have arrived on site from China and bends and fittings are on board ship with delivery expected shortly.

On completion of the initial road layerworks, the installation of services such as the stormwater, treated effluent pipelines and water pipelines will continue as the next phase of the project.



Due to the delays on the main contract, the work at Silvermine intersection has also been delayed, but should recommence in January 2018.

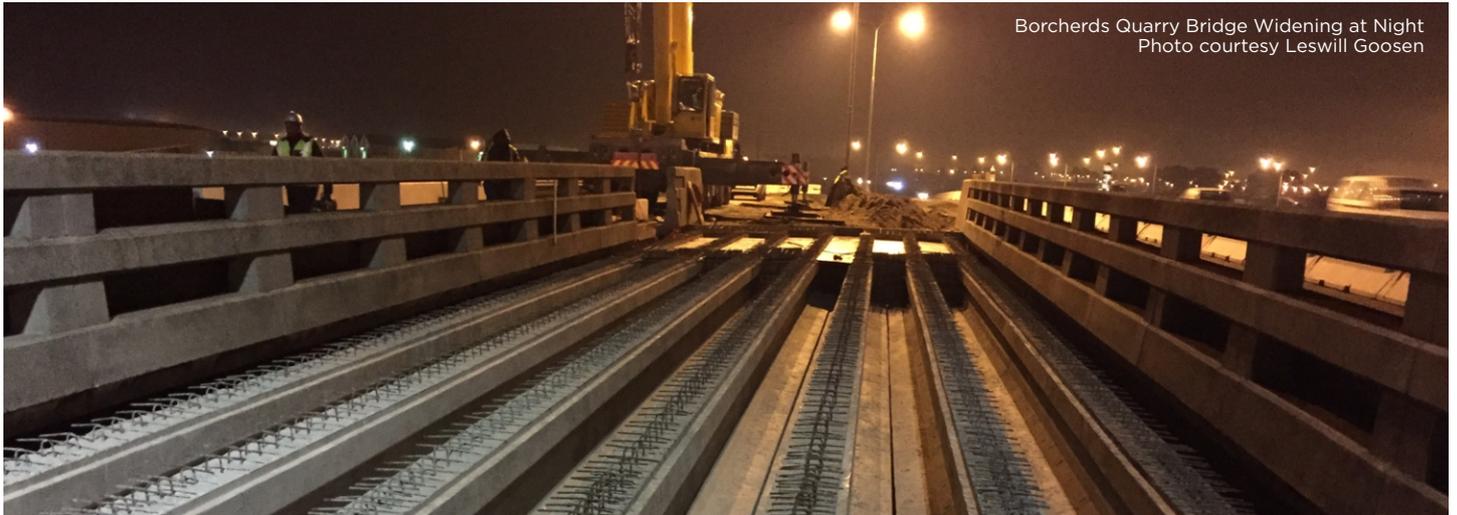
Silvermine intersection is on the migration path for the endangered Western Leopard Toad, but we have come through the first winter season at Silvermine without any apparent ill effects on the toad population.

Now that the bulk of the electrical cable relocations are completed, construction progress should proceed as programmed.

## N2 Borchers Quarry

by Andrew Laatz

**hho** Consulting Engineers has undertaken and successfully completed the first phase of the upgrading of the Borchers Quarry interchange for the Western Cape Government: Transport and Public Works. Power Construction were awarded the 26 month construction contract, which included the upgrading of the N2 between the existing Airport Approach interchange and the Swartklip Interchange. The construction involved the re-construction and widening of the N2 to a three lane cross section, the associated bridge widening, median lighting and the construction of the foundations of the future, planned realignment of the Borchers Quarry interchange.



Borchers Quarry Bridge Widening at Night  
Photo courtesy Leswill Goosen

## R44 De Beers Interchange Upgrade

by Paul Faria

Planning and design for the upgrade of the existing R44/N2 (De Beers) Interchange, near Somerset West, commenced in June 2016. The City of Cape Town appointed **hho** to provide traffic capacity upgrades, and to provide bicycle and pedestrian (NMT) facilities along the R44, between Main Road and Beach Road. The rehabilitation of the existing lanes has also been included in the scope of works. The City of Cape Town has made every effort to provide for all modes of transport along this route.

The Client bodies represented on this project are SANRAL, the Western Cape Government, the City of Cape Town and Paardevlei Properties. The interaction between the various Client bodies has been extremely positive and has resulted in a solution which all parties have approved. It is noteworthy that the project will be funded by the public and private sectors.

The overall project consists of three phases. Phases 1 and 2 (Beach Road to De Beers Interchange) have a construction cost of ±R 65 million. This includes two pedestrian bridges alongside the existing N2 bridge.



We anticipate going out to tender on this project by the end of 2017.

Construction is planned to take 18 months. Phase 3 (R102 to Main Road) consists of pedestrian bridges alongside the R102 and existing railway bridges. Additional traffic lanes and NMT facilities are planned for both carriageways.

The City of Cape Town and the public are looking forward to experiencing the additional lanes, NMT facilities and street lighting for the route, which in turn will facilitate the future developmental growth of the area.

## Exciting Building Structures - Ekurhuleni

by Allan Benn

**hho's** structural design team has undertaken the conceptual and preliminary designs for two landmark architectural buildings in Johannesburg.

The Knowledge Centre is a pair of 12 storey buildings which includes a 15m diameter concrete ball to house a high-tech planetarium. Each curved floor shape is different and external columns are inclined to follow the smooth shape of the building's glazed façade. Large floor spans between columns allow for open-plan office layouts and have been achieved with flat slabs and column heads. Final design may include pre-stressing of the floors. Below the buildings a large parking basement is being designed for this building and to link with adjacent basements in the future. High level pedestrian bridges will link the two separate buildings.

The second building is an 11 storey Hospitality Building, which will accommodate a school as well as offices and retail stores. Architectural concrete cladding at lower levels and large curtain glazing add to the aesthetics of the building. Other features are a large swooping canopy down the full height of the front façade, suspended third floor swimming pool and a winged roof structure.

Both projects have been commissioned by the Ekurhuleni Metropolitan Municipality and fit into greater development masterplans for Germiston. **hho's** involvement includes structural and civil engineering services. The two buildings are being undertaken by one project team, led by IDC Architects.

**hho** is using Revit, the architect's drawing package of choice, to model the floor and column layouts and to assess the structural scheme. This allows easy sharing of files between the disciplines and can be used to coordinate design development.



3D Model of the Knowledge Centre Buildings Showing the Planetarium Ball



3D Model of the Hospitality School Building

## Online BRT Guide



The Online BRT Planning Guide

**hho** is proud to have made considerable contributions to this publication by ITDP, and specifically in the context of BRT Infrastructure Planning and Design, as well as Project Planning for BRT Systems. Image courtesy of ITDP.

(<https://brtguide.itdp.org/>)

## Madagascar Mill

by Allan Benn

**hho** and Ascon Africa undertook the design and supply of a new animal feed mill in Madagascar for Agrival. This work builds on **hho's** experience in providing similar milling and grain storage facilities in Mozambique. The structural design team has completed the structural engineering design of the steel building frame to support 6 floors of Buhler's milling equipment.

The project documentation and our appointment are in English, and to South African design standards. However, the reality is that Antananarivo operates in French and local Malagassy languages. **hho** has been engaging the client and contractor meetings in French and German and receiving geotechnical reports in French. The 480 tons of structural steelwork will be supplied by Chinese fabricators, and so the design has had to accommodate the steel grades and member sections available in China. Further international input comes from the storage bins, which will be designed by Dutch specialists.

Site conditions require the building to resist tropical cyclone winds of 190km/h. The floors have been designed to carry milling and electrical equipment designed and supplied by Buhler from their bases in Switzerland, Spain and China. Floor loading considers the installation and final positions of all machinery, some of which is installed suspended from overhead floor beams. Stairs and platforms are provided for operation and maintenance of the mill. When complete, there will also be a gantry bridge to link the new mill to a similar adjacent mill building. The new mill facility will allow Agrival to consolidate its position as the dominant animal feed supplier in the western Indian Ocean area.

**hho** has produced 3D Modeling graphics of the whole building to show the interaction of different parts of the steel structure. The client has even been shown visuals of how steel elements will be packed into shipping containers and how the building responds to various load conditions. Advanced finite element analysis software, Sofistic and Prokon, has been used to design the superstructure and assess more than one hundred loading conditions. Workshop fabrication drawings have been produced to show every member of the entire building and provide 3D images of how they are to be constructed on site. With such advanced computational facilities, it has been possible to understand how different parts of the building are loaded and to adjust the steel members to afford material savings to the client.

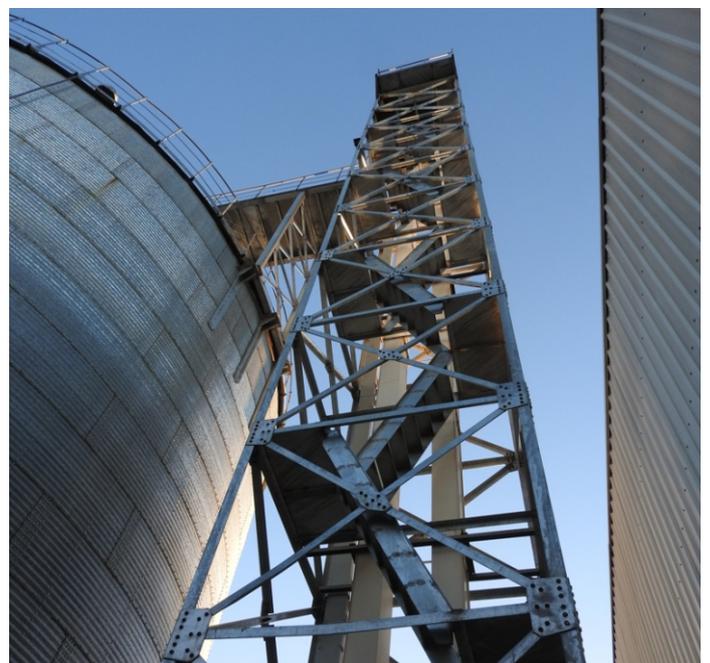
Corrosion protection considers the sea voyage and land delivery to the site, after which, local painting will be carried out in a relatively non-aggressive inland environment.

**hho's** design package of over 200 drawings for the steel superstructure was presented to the client in Antananarivo. The quality of design and information supplied convinced the client to award **hho** the foundation/basement design package as well.

Currently, the first steelwork is being loaded into containers for delivery by sea and will soon arrive at the Madagascar port of Toamasina.



Existing Mill Building and Warehouse



Silos and Elevator Tower

## Jabulani Transit Oriented Development Phases 4 to 7

by Makotsene Mukwamataba

The Jabulani TOD is a transportation and community upgrade project that is integral in development of the Jabulani economic node in Soweto, one of the largest townships in Africa. The client, Johannesburg Development Agency (JDA), views this as a flagship project, allowing for a capital budget of R 180 million. This year, Phases 4, 5 and 6 designs have commenced construction with Phase 4 being near completion. The images below outline the progress of construction of Phase 4.

The main focus of the project is the upgrade of 7km of internal roads, six intersections, two major traffic circles and NMT facilities. The project further includes the development of a mixed use Community Sports Facility (Phase 6) area as well as new Road over Rail Bridge (Phase 7), currently in detail design stage. It gives **hho** great pleasure to be a part of this revitalizing project.



Legogo Road Before Construction



Water Tower Link Road Before Construction



Water Tower Link Road During Construction



Legogo Road During Construction

## Conradie Hospital Redevelopment: “Better Living Model Game Changer”

by Fred de Villiers

**hho** was appointed as part of the Technical Transaction Advisory Team to the Western Cape Provincial Government for the proposed redevelopment of the disused Conradie Hospital site in Thornton, Cape Town. This project has been branded a Better Living Model Game Changer because of the innovative and pioneering business model on which it is based. The project is a partnership between the Province, City of Cape Town and developer, with a funding model involving the private and public sectors. Upon completion, the 22 hectare site will be home to 3,600 residential units, two schools, a multi-purpose sports centre, community facilities and some 70,000m<sup>2</sup> of mixed use development.

**hho** is providing technical advice on all matters relating to transportation and stormwater engineering.

This has meant reviewing the preliminary designs done by others and providing input into the bidding and adjudication processes.

We are pleased to say our traffic and stormwater studies have resulted in more technically feasible and socially responsible solutions. Road and transport links were optimised and it is no longer necessary to realign the Elsieskraal canal!

The Conradie site affords the opportunity to locate affordable housing in close proximity to public transport and work opportunities, in line with the City of Cape Town's transit oriented development strategy. Pedestrian, cycling and public transport facilities provided by this project, will link this site to the nearby road and rail network.

## Rehabilitation of Main Road 287 between Robertson and Bonnievale

by Charl Avenant

**hho** was appointed for the design and construction stages of this project by the Western Cape Government in 2006 however, owing to budgetary constraints, the project was shelved and only went out to tender in May 2016. It was awarded to Triamic in November 2016 and is due for completion in September 2018.



Cape Seal Coarse Slurry Application



Kogmanskloof Bridge Widening:  
Working Platforms Suspended from Above  
Photos courtesy of Eldrid Struis

Whilst the project is essentially a rural roads project, the urban and peri-urban portion through and adjacent to Bonnievale has presented significant challenges in terms of the relocation of services and accommodation of traffic during construction, particularly due to active businesses requiring access and parking.

Another challenge has been the widening of the Kogmanskloof Bridge. It had been originally envisaged that the widening could be completed without impacting on the riverbed. However, core drilling undertaken during the contract revealed that there were cavities in the soil below several of the caissons. To increase the factor of safety of the bridge under the increased load, cement slurry will be pumped under pressure via a manchette tube to form a stable “bulb” of concrete under the caissons to allow for some measure of end-bearing to augment the factor of safety. All of these measures will need to take place without any “yellow machines” laying tracks in the riverbed. We are certainly confident that the contractor and the site team will rise to this challenge.

This project is also on the route of the Coronation Double Century Cycle Tour on 25 November 2017. Needless to say, with the road giving way to fast-moving bicycles, the contractor will have to pay special attention to ensuring that the roadway is clear of loose sand and cobbles.

## Century City Golf Day

by Lihan van der Merwe

The **hho** golf team took part in the 9th annual Century City Golf Day on 18 October 2017 hosted by the Century City Property Owners' Association at the Atlantic Beach Golf Club. The weather played along and it was a great day out on the golf course. The team consisted of Pierre van Zyl, Lihan van der Merwe, Bruce Barratt and Leon Bester.

(From left) Lihan van der Merwe, Chris Blackshaw, Chief Executive Officer of the Century City Property Owners' Association, Pierre van Zyl



## Open Streets

by Matthew Meder



Photo courtesy of Rich Conyngham

Between 2013 and 2017, Open Streets Cape Town hosted 12 Open Streets Days in five parts of Cape Town, attracting between 3 000 and 15 000 participants at these events.

Transport Month kicked off in Cape Town with Open Streets Day on Sunday 01 October 2017. A 5km stretch of Main Road between Observatory and the Cape Town CBD was truck, bus and taxi free, creating a space for people to walk, cycle or skate.

The event started at Darling Street in the CBD, diverted down Sir Lowry Road and into Victoria Road, Woodstock, continuing as Main Road into Salt River.

**hho** added our skills to the traffic management plan, by providing the temporary road signage and markings plan for the Open Streets Main Road event. It included the positioning of approximately 150 warning signs, 200 heavy base cones, 160 barrier delineators and 2300 metres of barrier fencing across 38 locations along the event.

The 5km stretch closed to motorised vehicles, hosted an open space for pedestrians, cyclists, skateboarders, wheelchair users and other non-motorised transport users to move in safety.

Open Streets was a chance to experience the city in an exciting and fun way through colourful pedestrian-based activities.

## hho Athletes

### Steam Train Challenge

by Chad Peacock

On 7th October 2017, **hho** entered two teams into the inaugural Steam Train Challenge. The two teams went head to head, running and cycling relay legs, with a vintage steam train in a race from Wellington to Ceres. Ultimately, the vintage steam train was the winner, but both teams proudly finished the race in a respectable 5 hours and 45 minutes.



(From left) Stephen Agar, Don Hugo, Andre Frieslaar, Ian Macdonald, Matthew Meder, Sirraaj Hendricks, Daniel Benn, Hanno Du Toit, Allan Benn, Robert Kotze (Absent: Chad Peacock, Matthew Minter)

### Impi Challenge

by Allan Benn

In April, **hho's** athletes took on the Impi Challenge in Stellenbosch – 5km and 10km cross country races over obstacles. The obstacles consisted of walls to climb over, logs to crawl under, monkey bars to hang onto and even a dam to swim through. Fun was had by all despite being covered in mud, bruises, scratches and sore arms and legs.



(Back from left) Sirraaj Hendricks, Chad Peacock, Hanno du Toit, Bruce Barratt, Nhlamulo Ndlovu, Ruan Piek, Thys Pienaar (Front from left) Matthew Minter, Matthew Meder, Michael Kussie, Nasreen Razak, Don Hugo, Allan Benn

## Sustainable Public Transport for Stellenbosch Communities

by Keegan Mossick

The Provincial Sustainable Transport Programme, has been established by the Provincial Government Western Cape (PGWC) to implement a sustainable and systematic approach to public transport and Non-Motorized Transport (NMT) in identified municipalities, with Stellenbosch Municipality (SM) being the first selected. For the 2016/2017 Financial Year a budget of R 5.3 million was allocated by PGWC and SM for the project implemented in Klapmuts, Cloetesville, Idas Valley and Kayamandi. Although faced by challenges throughout the 4 month process, 4km of NMT facilities were constructed on time and within budget. The newly implemented NMT facilities were gladly welcomed by local community.

Photos courtesy of Pierre Smit & Keegan Mossick

### KLAPMUTS Existing 1.5m gravel path along the canal

Before



After



### CLOETESVILLE Various sidewalk upgrades

After



After



### KAYAMANDI

### PEDESTRIAN CROSSING Relocated further south, pedestrian refuge with dropped kerbs

Before



After



## Obituary



Tshifhiwa Booi tragically passed away in July this year. He was an integral member of our Jabulani project team in the Johannesburg office. His energy and outlook on life was in many ways inspiring to us all and he is sorely missed. Tshifhiwa leaves behind his wife, Tshilidzi, and their daughter.

## hho Shareholders



hho is a majority black-owned company, comprising 10% black female ownership, and has achieved B-BBEE Level 2 status. We strive to be Level 1, through our internal empowerment policies.

## Professional Registration

Congratulations to Warren Scheepers on achieving his Professional Engineering Technician registration in August this year.



Receiving their long service awards from CEO Andre Frieslaar: Bhukumuzi Dlamini (10 years), Lana Samuels (10 years), Reema Sukdeo (10 years), Johan Thiant (15 years), Graeme Warrin (30 years), Stef Naude (25 years) & Andre Frieslaar (25 years). Not pictured here are Terence Fester (10 years), Riefaat Albertus (10 years)

## Executive Committee



The directors of hho are pleased to announce the election of Naseema Ebrahim as Chief Administration Officer. She joins the Executive Committee, which comprises from left to right: Randall Dirks (Eastern Cape Regional Director), Brentt Mossick (Gauteng Regional Director), Andy Laatz (Chief Financial Officer), Andre Frieslaar (Chief Executive Officer), Fred de Villiers (Chief Business Development Officer), Donovan Hugo (Chief Operations Officer), Naseema Ebrahim (Chief Administration Officer)

## New East London Office



In September 2017, hho East London office relocated to

Ground Floor, Office No.2, Infinity Place, 14 St Helena Road, Beacon Bay, East London. We now have an open plan office with a great view.

## Long Service Awards