

## Loskop Project Gains Recognition

HHO are proud to reflect on receiving two awards for 2018. Both awards are for design upgrades of the 54km of road between Middelburg and Loskopdam (N11 - Section 10) in the province of Mpumalanga.



HHO wins Commendation award at the CESA AON Engineering Excellence Awards 2018.

The HHO team:  
Rirhandzu Mangotlo (Assistant Resident Engineer), Donovan Hugo (Contract Engineer), Rian Ilse (Resident Engineer), Makotsene Mukwamataba (Design Engineer), Meggyn Marot (AON) and Bongani Matlala (Assistant Resident Engineer)

Photo courtesy of CESA



HHO wins Highly Commended award at the Construction World Best Projects Awards 2018.

The HHO team:  
Bongani Matlala, Rirhandzu Mangotlo and Donovan Hugo (CEO)

Photo courtesy of Crown Publications

One of the main objectives of the project was to include safety features in the pass, as many lives have been lost in this dangerous section of the route. This project for SANRAL was implemented by HHO and KPMM Contractors, delivering high-quality infrastructure integrating perfectly with the surroundings and providing the traveller with a safe passage.

The project was completed in December 2017 and opened to traffic in time for the school holidays.

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## Message from the CEO

I feel privileged to be giving this message for the first time as CEO of HHO – a position which I am extremely proud to hold and take on with the utmost responsibility and dedication.

We have been in our relocated Cape Town office for 8 months now. There is a positive and productive buzz with active and vibrant participation that can be witnessed in our canteen at tea time and lunch time. Various clients and colleagues that visit have commented on the happy energy that can be felt in the office. Our open floor plan has resulted in much more collaboration and transfer of skills between staff as well as better co-ordination amongst the various teams.

Our economy is experiencing a shrinkage in public sector capital expenditure for the first time since 2010, while private sector investment is cautious. HHO has also been affected by the downturn, as the roll out of certain projects is not happening as we would have liked. Certain of our projects are being hampered by institutional issues, such as the securing of funds and the extension of appointments, while others are on hold, adopting a “wait and see” attitude.

But as professionals, we need to focus on the positives of our country and the contributions that we can make to build a better future for all. At HHO, we will continue to translate our engineering acumen and innovation capabilities into real-world product solutions that drive revenue generation and delight our customer base.

HHO is committed to the advancement of economic transformation and to enhance the participation of black people in the South African economy. This year we confirmed our commitment by achieving our objective of being a B-BBEE Level 1 contributor. This was done by continual meaningful transformation and growth in terms of ownership and management from within our company. We are now 51% black owned and 10% black female owned. No external persons were employed by us to achieve this milestone. We celebrate this milestone by thanking our committed team at HHO.

I would like to thank all the staff at HHO for your contribution and dedication to growing our business. We trust that the good fortunes that we as a company have had up until now will continue for many years into the future.

Enjoy the end of year break.

Yours sincerely  
Don Hugo



## HHO Moves

### New offices, the same considered approach



In April 2018, HHO Cape Town office relocated from our previous home in Bree Street to our new space in the Towers. Our new address is:

14th Floor, The Towers South  
2 Hertzog Boulevard, Cape Town, South Africa



Our Johannesburg office also relocated in November 2018. You will now find us at:

Suite A, Ground Floor  
345 Rivonia Road  
Edenburg, Rivonia, South Africa

## Road Safety Engineering

by Pierre van Zyl

Road traffic accidents are a major worldwide cause of injuries and fatalities. It is our responsibility as engineers, the people at the forefront of road safety, to ensure that the infrastructure we create poses as low a risk to people as can be practically achieved.

In the light of this, the SARF in association with SANRAL presented a day seminar on Road Safety in Engineering. The seminar covered topics including child safety, worldwide standards, road safety audits, designing for traffic enforcement and intelligent road systems.



Table Bay Boulevard Traffic Deviation

Due to HHO's experience in this field, an invitation was extended to HHO to present a session on the UK Road Restraint System Standard and the application of the Road Restraint Risk Assessment process. This presentation was held on 18 September 2018 and attracted delegates from a wide range of industry sectors. The success of the event attests to the importance of road safety as an issue that should be carefully considered by those designing, implementing and maintaining South Africa's infrastructure.

## Robben Island Helistop

by Pierre van Zyl

Robben Island is one of Cape Town's favourite tourist attractions and has been awarded the status of a World Heritage Site. The existing helicopter landing area, constructed in 1940, has fallen into a state of disrepair and requires rehabilitation before it can be reopened.

HHO was appointed by the Robben Island Museum in May 2018 for the rehabilitation of the Robben Island Helistop. The new helistop will see the restoration of the landing area with two helicopter parking bays and modern aviation lighting.

### Fun Facts:

- Three South African presidents were inmates on Robben Island
- The island used to have a 9-hole golf course
- There are herds of springbok on the island, from its days as a trading post
- The sandstone used to build the Castle of Good Hope was mined on Robben Island



Existing helistop



View from Robben Island



## Habitat for Humanity Build

by Stef Naudé

On the 3rd October, a team of HHO volunteers participated in a build through Habitat for Humanity an NGO that strives to break the poverty cycle by providing low-income households with a decent home. The build was undertaken in Mfuleni as part of World Habitat Day 2018.

Thank you to the volunteer team for your contributions towards the Mafahla family, who will now enjoy the safety and privacy of a formal home:

Don Hugo, Stef Naude, Graham Demmer, Alwyn Strauss, Karin van Lill, Randall Woods, Fred de Villiers



The HHO Habitat Build Team sharing their hands-on skills



## Dinaledi Educational Coaching

by Stef Naudé

HHO is a proud sponsor of Dinaledi Educational Coaching, an organisation that works hand-in-hand with the local Educational Districts. Dinaledi Educational Coaching runs coaching programmes that helps to create quality learning environments in underperforming schools to improve the schooling experience of youth at risk within marginalised communities have a good learning experience and realistic opportunities to continue with tertiary studies and be gainfully employed.

## Century City Golf Day

by Pierre van Zyl

Once again, HHO has enthusiastically supported the Century City Golf Day. This event was held on the 10th October at the Atlantic Beach Country Club and provided a fantastic networking platform for the HHO team.



The team  
Johan Slabber (MDA)  
Jedd Grimbeek (MDA)  
Pierre van Zyl  
Bruce Barratt

by Rebekah Lowe

## ITDP Webinar

Andre Frieslaar presented his first webinar on BRT Planning: infrastructure and design on the 15th May. Andre Frieslaar is one of the BRT Planning Guide authors and a champion for change and development in public transport. He has raised awareness around sustainable transport solutions through local and international papers and presentations. This webinar was a platform to present Volume 6 of the BRT Planning Guide and provide an opportunity for people to ask questions on the topic.



Cape Town's MyCiTi BRT

## Sundwana Water Supply Scheme From stand-alone to regional

by Randall Dirks & Rebekah Lowe

During its 2003 feasibility study, the Amathole District Municipality (ADM), the client, identified that the Willowvale magisterial district in the Sundwana area is the last to be supplied with access to water. The original Sundwana Water Supply Scheme (SWSS) would supply potable water directly to these areas, servicing a total population of 6 388 people (1 315 households).

The feasibility study done for this project concluded that although the Sundwana project should be implemented as a stand-alone scheme, the ADM should investigate options to increase the supply area of the dam and in turn, increase the viability of the project. As a result, the increased supply area of the dam would serve 194 villages with a population of 126 242 people. Preliminary dam site investigations undertaken by HHO in 2007 resulted in the Sundwana Dam being relocated to the Nqabara River to accommodate the extra capacity required by increasing the capacity of the dam to 3.5 million cubic meters.

This project is being implemented in seven phases to facilitate early water supply to the Sundwana area. The first four phases have already been built and the remaining three are still to be constructed.

The project's success so far has been the client's commitment to building the smaller infrastructure first, whilst waiting for the bigger infrastructure to be implemented. By doing this, work has been given to the people of the Sundwana villages during five phases of the project. As soon as the temporary water source is reached, they will also be able to receive much-needed water.



Construction of 2 Ml balancing reservoir



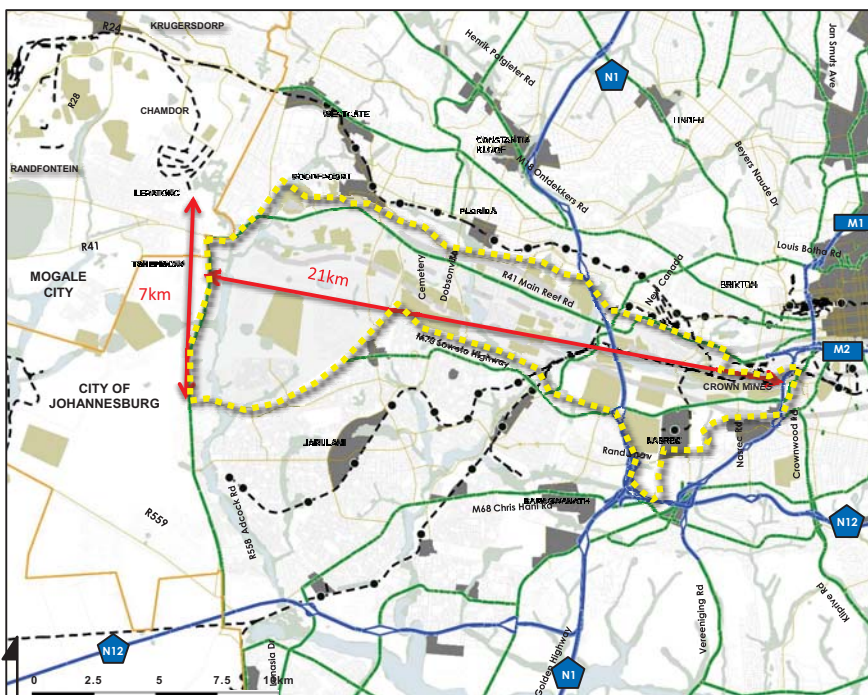
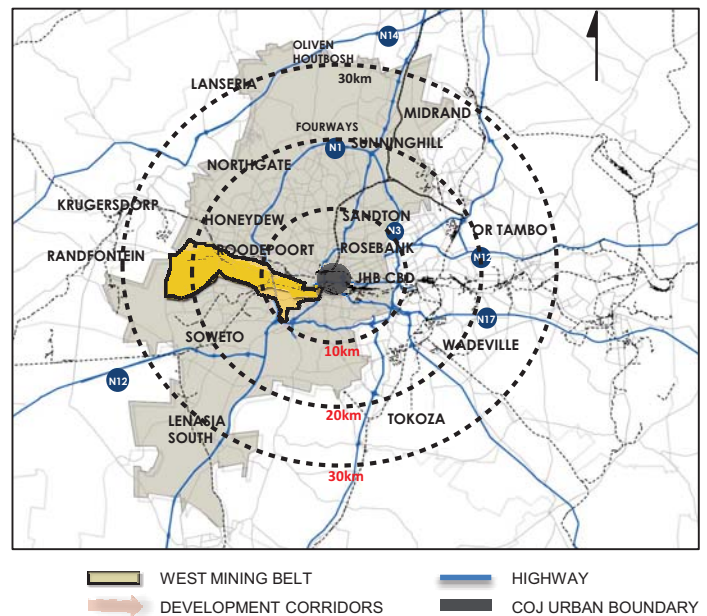


## Developing the Mining Belt in Johannesburg

by Stef Naudé

To the west of Johannesburg CBD is a centrally located corridor (West Mining Belt) of which large portions are derelict, due to mine dumps and slime dams, the residue of mining activities over more than a century, mostly for gold. There is currently significant development pressure on land that is located close to the CBD, even though large portions of it are environmentally degraded. In the absence of a clearly defined structure, the developments tend to be uncoordinated, and potentially compromise corridors required for future roads and services.

To address this, HHO and a consulting team comprising environmental, urban planning and urban design professions, have been appointed to undertake the preparation of a Traffic and Transport Road Master Plan by the Johannesburg Roads Agency (JRA). The objective of the Master Plan is to provide a cohesive framework and tool which will enable the City to implement the road network, evaluate land use management applications from a transport perspective, as well as implement various strategic developmental and transportation interventions. The Master Plan will hence provide the necessary structure to guide future development by means of a network of road reserves, which will take into account traffic capacity, utility services, non-motorised transport facilities (cycle- and walkways), and points of access to adjoining land parcels.



The study provides a unique opportunity to achieve some of City of Joburg's goals, such as redressing apartheid spatial patterns, as well as providing housing and job opportunities in close proximity to each other, thereby achieving integration and spatial transformation. While the Mining Belt currently creates spatial discontinuity through the undeveloped land and limited road connections, but it also presents significant opportunities for development that could integrate the north (Roodepoort and Florida) with the south (Soweto) and create a stronger east-west (including city-region) interrelationship, linking Johannesburg Central with Randfontein.

## Back to the Future

by Andrew Rowan

**If you love something, let it go. If it comes back to you, it's yours forever. If it doesn't, then it was never meant to be...**

In 2008, HHO said goodbye to the Paardevlei Interchange Project as the designs were halted at the end of the preliminary design stage. Fast forward ten years, and the City of Cape Town has appointed HHO's friends at Lyners Consulting Engineers to proceed with the project. Lyners have in turn appointed HHO Structures to assist with the bridge designs and geotechnical work. The prodigal project has returned!

The Paardevlei Interchange will be a new split level interchange constructed on the N2 near Somerset West. The intention is to provide access to the Paardevlei Precinct, which remains one of the few prime underdeveloped areas of land within the Western Cape.

The development of the interchange is planned in phases, and will initially carry a single North South Contraflow carriageway over the N2, the R102 and the adjacent Railway line. This puts several client bodies around the PMT table! Three bridges with prestressed decks, cantilevered abutments and piled foundations are required.

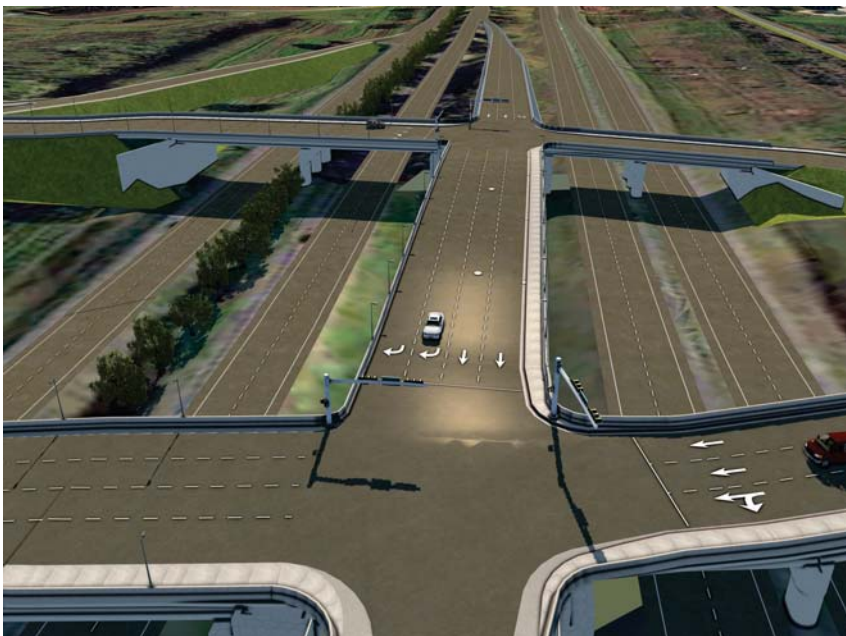


Simulated images of Interchange Project designs (HHO)

The devil in the detail (the detailed design to be precise) has been the accommodation of services, in particular a 840mm water main running into Cape Town from the Steenbras dams.

The preliminary design, completed in 2008, required the water main be relocated as it runs under the proposed pilecap. The City of Cape Town were understandably not thrilled with the prospect of relocating a water main while the city remains under the devastating effects of the largest drought in recent times. This forced HHO to go back to the drawing board. A revised concept, which connects two of the three Phase 1 bridges, was tabled for approval. This revised concept results in moving the pile positions further away from the water main, allowing the main to stay where it is. Isn't it fantastic when a plan comes together.

HHO is looking forward to moving into the construction phase of this exciting project.





## HHO Rocks

by Bruce Barratt

HHO's Geotechnical Division has had a busy 2018. The team managed and supervised a variety of SANRAL projects in the Western Cape and Kwa-Zulu Natal.

These projects include a subsurface drilling contract along the N1 and R34 outside Kroonstad, which has since been completed, and a quarry and material sources contract in KZN, which is still underway.

Other smaller investigations include boreholes for the Vygieskraal Bridge near Athlone and test pits at Paardevlei in Somerset West.

HHO was also successful in a tender for the Western Cape Department of Human Settlements. The team is looking forward to providing geotechnical services for the much-needed housing in the greater Cape Town surroundings.

In other news, HHO warmly welcomes Alwyn Strauss to the Geotechnical Division. Alwyn is a geotechnical engineer from Namibia who has brought a wealth of knowledge on modelling geotechnical data in three dimensions to the Division.



Core drilling for R34 Kroonstad



Core drilling for N1 Koppies



Site investigations at Paardevlei



Percussion drilling for N3 quarries



## N3 Corridor Upgrade

by Don Hugo

The Durban-Gauteng National Route 3 (N3) Corridor is the most important economic corridor in South Africa.

Durban is by far South Africa's busiest port with over 80% of goods carried along the N3 Corridor (75 million tons of freight per annum).

The upgrade of the N3 Corridor by SANRAL is essential if one of government's strategic integrated projects linking the Port of Durban with Gauteng, South Africa's economic heartland, is to succeed.

If the upgrades do not go ahead, it is estimated that users of the N3 will continue to suffer losses of nearly R800 million per annum- due to accidents and time delays. R775 million can be attributed to time delays and between R250 000 and R295 000 per hour to accidents and road closures due to accidents (These estimates are 5 years old).

Traffic studies indicate that the N3 is reaching its design capacity with freight volumes anticipated to double in the next 20 years. Structurally, the existing pavement has deteriorated and is in need of an intervention.

The focus of the N3 upgrade spans from Durban to Pietermaritzburg. The upgrade will include the widening of the N3 carriageway and the reconfiguration of most interchanges along this route. Due to the length (84km) and estimated cost (R22 billion) of the entire N3 upgrade, the project has been broken down into several detailed design packages.

HHO has been appointed to carry out the upgrades on the 11,2 km portion between the Hammarsdale and Cato Ridge interchanges with an estimated construction value of R1,8 billion.

HHO has also been appointed to carry out a materials investigation for potential borrowpit and quarry sites for the entire route. As part of the ongoing sustainability drive in road construction, it is envisaged to use all recovered concrete, asphalt and gravels from the existing road. HHO is co-ordinating the most optimum use of the recovered materials and looking at ways to either re-cycle or up-cycle the materials by blending with suitable products from site crushing or from commercial sources.

Construction improvements from Cato Ridge to Pietermaritzburg (2 lane sections) have been programmed to commence first with the anticipated date of construction towards the end of 2019. The new road will consist of a minimum of 4 lanes with 5 lanes in areas where climbing lanes are required.



## Under Construction

by Fred de Villiers

### Kommetjie Main Road/ Ou Kaapse Weg

Ian McDonald, our Resident Engineer, reports that construction of the upgrade of Kommetjie Main Road and Ou Kaapse Weg in Sun Valley is progressing nicely. Despite the congested site and many constraints, local traffic has been kept flowing and all services have remained operational. The team has enjoyed good support from local communities and councillors and hope to complete this prestigious project by the end of 2019.



Images from Kommetjie Road Project courtesy of Pierre Smit

### Go!Durban

The Cape Town Office has been hard at work in Durban to design and administer the Right of Way lanes that comprise Route C3A of the Go!Durban BRT system. This has been a massive and complex project of which HHO can be rightfully proud. At the present time stations are being constructed and should be completed by May 2019. The project has weathered much protest action, public violence and intimidation, which have certainly complicated matters for the construction teams. Paul Levy reports from the design office that many lessons have been learnt, such as the usefulness of polymer-based stormwater inlet grids as front-door welcome mats. Apparently they are excellent.

### Broadway Boulevard

From the comfort of the design office Ruan Piek hopes that, when the upgraded road is opened to traffic, we will have a satisfied client and happier road users. This project has included many modifications to underground services, including a major stormwater capacity upgrade. Well done to Warren Scheepers, for dealing so ably with the many construction challenges on site.

### Bosmansdam Road Upgrade

Keegan Mossick reports from site that he has enjoyed engaging with the general public and various stakeholders, to whom he has explained the future benefits of the project. The project team has had some tricky negotiations with the residents of Joe Slovo informal settlement, who demanded jobs, and have done well to keep the project on track. Completion is due to by the end of February 2019.

### Redevelopment of Ratanga Junction, Century City

The Ratanga Junction Theme Park in Cape Town closed its doors on 01 May 2018 to allow for the redevelopment of the Park into a modern, mixed-use precinct. HHO is proud of being involved in the planning and design of bulk municipal services and infrastructure. Earnest construction will commence early in 2019 with bulk earthworks to reshape and deepen canals, and build new canal retaining walls. Megan Woodward recalls a last-minute site visit in high heeled boots and stockings and says she is still not sure how she didn't manage to ladder her stockings or fall into the water!



## IMPI Challenge

by Matthew Minter

This year HHO entered two teams into the Impi challenge: the Rangers and the Warriors. On the 17th of November 2018, the teams gathered on the morning of the race with high hopes and great spirits. Each team consisted of 8 people, some veterans to the event and many 1st time challengers. The event tested our will power and encouraged us to work together to overcome each obstacle. Both teams completed the race, battered and bruised, but with excellent times. It is on this day that we slayed the challenge and became true Impi warriors.

## Steam Train Challenge

by Chad Peacock



This year's steam train challenge was held on the 20th of October 2018. We entered three teams of 6 people per team, which speaks to the popularity of the event. Gale force winds tested our athletes like never before, fortunately HHO teams are made of very tough stuff and we managed the challenges well. Our athletes never gave up and we were able to finish with our heads held high. Ultimately, the train beat us this year, but the character and perseverance of our athletes won the day for us.

## Hiking Lion's Head

by Ruan Piek



HHO YPF committee has started a hiking "club" in which we try to plan at least one hike every month, varying in difficulty. The first hiking expedition up Lion's Head was well received with 10 people and their significant others joining in on the fun. After some near slips and Simba chips we got to the top and enjoyed a stunning view of Cape Town.

## SAICE UCT Cocktail Evening

by Rebekah Lowe



The SAICE UCT Cocktail Evening was held on the 1st August 2018 at the UCT Upper Campus and provided us with an opportunity to showcase the different facets of HHO to prospective civil engineering professionals. The event entailed a brief presentation from each company (Pierre van Zyl) followed by a student-industry interaction session.

Chad Peacock, Hanno du Toit, Matthew Meder and Evan Bredekamp

## CESA Volleyball Tournament

by Matthew Meder



The annual CESA YPF Beach Volleyball event took place on Thursday 22nd February. HHO being regular participants, and previous champions, were keen to raise the bar of competitiveness against rival consultancies on the flatbed sands of Camps Bay beach. Our streak of victories were unfortunately short lived this year, with our team being knocked out in the quarter finals. None the less it was an excellent day, in beautiful part of Cape Town, spent with some rather great company.

## Casual Day

by Rebekah Lowe

HHO participated in Casual Day on the 7th September. Casual Day is a fundraiser event that aims to raise awareness for people with disabilities. HHO sponsored the R10 Casual Day stickers for each employee and everyone was encouraged to dress up to the theme in support of the cause.

This year's theme was 'Everyday Heroes'.



Paul Faria, Nasreen Razak, Rita Effune, Nadia Lipsitz, Riefaat Albertus, Andrew Rowan, Evan Bredekamp



Muneem Solomons, Rebekah Lowe, Riefaat Albertus, Ruan Piek, Matthew Meder, Luke Bodenstein

**Well done to Nasreen Razak for winning best-dressed Everyday Hero.**

## HHO Cape Town Office News



HHO Cape Town Office is pleased to announce that as of May 2018, Yolanda Warrin has taken on the role of Office Manager for the Cape Town office in addition to her current role of HR Officer. As Office Manager, Yolanda is in charge of the day-to-day running of the office in terms of supplies, cleaning and landlord liaison.



Graham Demmer heads up Health & Safety in the office, which involves first aid, fire marshals, and evacuation procedures. He is also extensively involved in the management of HHO's QMS policies, while still being an active member of the Structures Division.



Tania Cotton has taken on the role of Business Development Administrator, which involves facilitating tender and proposal submissions as well as all of HHO's branding and promotional requirements.

## Qualifications Achieved

Congratulations to:

- + Wood Yam on achieving his Professional Engineering registration in December 2017
- + Anvesh Mahabeer on achieving his National Diploma in June 2018
- + Rirhandzu Mhlongo on achieving her Professional Engineering registration in October 2018

## Long Service Awards

### 30 years:

Don Hugo  
Jan Stompies

### 15 years:

Evan Bredekamp  
Nadia Lipsitz

### 10 years:

Anvesh Mahabeer  
Brentt Mossick  
Graham Demmer  
Hilda Hlongwane  
Karin van Lill  
Lihan van der Merwe  
Makotsene Mukwamataba  
Randall Woods  
Rirhandzu Mhlongo  
Susan Smit  
Thabo Mpalala