## Formwork Scaffolding Engineering

Issue 1 | 2016 Southern Africa



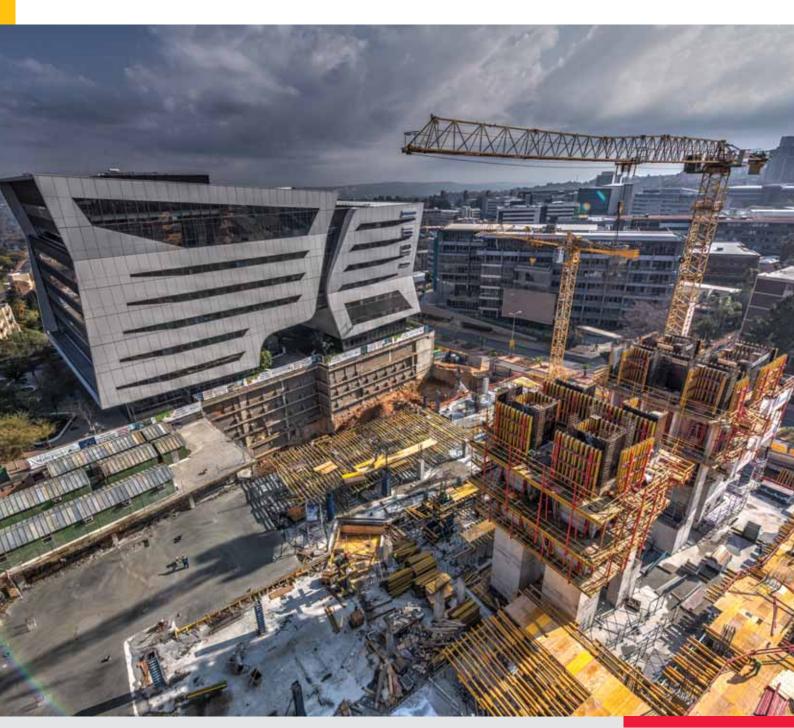








## Successful construction with PERI



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### Dear Customers and Readers,

Welcome to the 2016 edition of PERI Scope. Although market conditions and the construction sector remained very challenging during 2015, we are proud to share a number of wideranging projects in both the building and civil sectors. The cornerstones of our PERI strategy are to continually innovate, invest in both our people and our products and to provide solutions that meet our customers' needs. The variety of projects and solutions showcased in this edition demonstrate that our focus and strategies are well on track.

The first RCS project in South Africa – Alice Lane Phase 3, in Sandton – is an excellent example of our team's commitment to working with our customers to solve complex construction challenges. Another good example of a large building project in the Johannesburg area is the new Discovery and Sasol head offices, where we primarily used our PERI SKYDECK solution, with impressive cycle times. For this project, the first superstructure of 300 000 m² is due for completion at the end of 2016.

Furthermore, civil engineering projects like the Black Rock reservoirs in the Northern Cape and the Umdloti high-level bridge, demonstrate PERI's engineering expertise and ability to find cost-effective solutions using VARIO.

Our growth in African markets has also been impressive where new-age formwork solutions have been introduced, for example the use of PERI tables for the Edificio Platinum building in Mozambique. As part of further growth and expansion plans into Africa, PERI recently opened a new subsidiary in Tanzania. We look forward to sharing some of the new and exciting projects for this region in our next edition of SCOPE.

A number of new products, like MAXIMO, PERI UP, ROSETTE and the hydraulic RCS (Rail Climbing System), have already been introduced into the market. In April 2016, new products, specifically for emerging markets like South Africa, will be launched and showcased at BAUMA in Munich.

The scene is set for 2016 to be a challenging year. However if we all work together I have no doubt that these challenges can be overcome. Our success is only possible with loyal support from our customers and our dedicated team at PERI. I would like to thank you for your confidence in PERI and look forward to working with you on the next project.

Whom Cillian

Johan Cilliers Managing Director PERI Southern Africa

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# A range of PERI systems aid quick construction of high-rise in Mozambique

Edificio Platinum building, Maputo, Mozambique

**Contractor**PJ Africa, Maputo **Field Service**PERI Mozambique

PJ Africa Maputo recently completed the Edificio Platinum mixed-use building and, for their formwork needs, commissioned PERI Mozambique. The tower provides luxury apartments, corporate offices and retail shops, located with strategic visibility on Julius Nyerere Avenue.

Each storey is approximately 1 500 m² and at 26 storeys (72.59 m), it is one of the tallest buildings in Maputo, Mozambique. The project team managed a stripping time of just two days and, since time was key for this project, construction was completed in an impressive eight months. To achieve this, the contractor utilised 400 m² of TRIO, 450 m² of MULTIFLEX and had 67 tables on site, each 4 m x 2.5 m for a total of 670 m².







Agostinho Belem, General Manager, PERI Mozambique:

"Our expectation is that 2016 will be a year of great success and growth of around 16% compared to 2015.

The Mozambique government is encouraging foreign investment in infrastructure. Major projects, such as the construction of the Maputo-Catembe bridge, the Moamba Dam and the LNG plant at Cabo Delgado will all commence this year.

At our new 5 000 m<sup>2</sup> premises in Maputo, it is now possible to accommodate all new projects and supply top-quality service."



The project team managed a stripping time of just two days.

# First RCS project in South Africa

Alice Lane Phase Three, Sandton, Johannesburg

Contractor WBHO Field Service PERI Midrand

Alice Lane Phase 3 is the third phase of the exciting Alice Lane Precinct, which consists of three distinctive buildings linked by a public piazza. The site is located in the busy heart of Sandton and ideally suited for the inaugural use of PERI's RCS hydraulic self-climbing system – a first for South Africa!

Having already successfully completed the first two phases of the Alice Lane Precinct, WBHO was appointed as the main contractor for the next phase of this prestigious project. Intelligent and strategic planning allowed WBHO to select a system that would alleviate the crane time required for construction of critical-path elements on the project.

PERI Formwork Scaffolding Engineering (Pty) Ltd South Africa was awarded the contract for the supply of formwork, and used the RCS hydraulic self-climbing platforms on the lift core structures. The lift core structures posed some special challenges, which included: changing door opening levels and locations, varying pour heights and changes in shaft geometry, which varied from closed boxed sections, to open U-section scenic lift arrangements.

To accommodate these challenges, PERI's design and projects teams engineered the following processes:

- Customisation and strategic positioning of the RCS system, to successfully accommodate the scenic lifts.
- Positioning of the RCS rails and climbing shoes in the walls with the door openings. Because of the varying heights of the slab levels, anchor hole locations were pre-drilled to ensure perfect positioning in the header beams.
- Structural changes also influenced the VARIO wall formwork design, as internal shutters had to be designed to accommodate the ground floor shaft openings, due development into scenic lift geometry.
- The flexibility of the RCS platforms ensured that planned in-situ modifications were easily completed once they emerged from the closed shaft formation at ground level.

To ensure minimal disruption to the project's daytime activities, the system was completely installed and commissioned during night shifts. Efficient planning also



### Lance D'Aguiar, Project Manager:

"In general, the RCS system has worked well for WBHO. The support from the PERI team is, as always, of an excellent standard."

ensured that the limited space available for laydown and assembly of the RCS system was optimised most effectively. PERI's team of construction specialists in their respective fields provided day and night support to all aspects of the project: design, planning, programming, installation, supervision and so on. This ensured the successful installation and commissioning of the RCS system.

PERI systems purchased include:

- VARIO 790 m², 3.75 m high (manufactured in Midrand)
- 39 x RCS climbing rails, forming 18x Climbing units, consisting of 3x platforms in height per unit (working, intermediate and finishing)

- 8 x CB 240 platforms
- 5 x BR internal platforms
- Total platform surface area ±2 000 m<sup>2</sup>
- 2 x Hydraulic packs and 8 x cylinders
- Total of 160 m hydraulic hoses
- The system has the capacity to lift 4 x platforms simultaneously resulting in ±90 m<sup>2</sup> of formwork moved in less than 15 min.

The system placed on site has been a huge succes allowing WBHO to achieve cycle times of as little as 6 days with a team of only 12 people on both shaft core structures. All challenges have all been met with success, and it stands to reason that with PERI's expertise and quality of material, WBHO has been suitably impressed with the RCS system.











# Six PERI systems in use at large-scale multi-purpose development

Beacon Bay Shop 17, East London

Contractor
Khula Nathi Construction
Field Service
PERI East London

Shop 17 is in the heart of Beacon Bay, East London, just off the N6, and visible to anyone traveling this route. The first phase of the project consists of an office complex and the second phase of a highly anticipated 15-storey hotel. The complexity of the project, due to varying structural elements, necessitated a variety of PERI products, namely: LICO, DOMINO, TRIO, MAXIMO, PERI slab tables and MULTIFLEX.

The ground floor columns of the office complex are 4 m high and the following floors are at a height of 3.5 m each. The retaining walls range from 3.3 m to 15 m



Kenneth Thomson, Head Contract Manager:

"MAXIMO is the Rolls Royce of formwork."

in height. The height of the retaining walls and the finish required gave PERI the opportunity to recommend the MAXIMO system, which went above and beyond the client's expectations and resulted in the first sale of MAXIMO in the Eastern Cape.

All columns were constructed using PERI LICO column boxes. The hassle-free LICO boxes have a fast turnaround time, taking only three days per box. They were able to do roughly 40 columns a week. The retaining walls, lift shafts and staircase shafts were all done using a combination of DOMINO, TRIO and MAXIMO.







# Time-saving civil construction with VARIO

Black Rock, Northern Cape

Contractors

Assmang Ltd, DRA Global and Olivier Construction Field Service

PERI Bloemfontein

PERI recently completed a water system upgrade project for Assmang Ltd, DRA Global and Olivier Construction in the Northern Cape. The project comprised the design and construction of two 5 megalitre potable reservoirs, two 2.5 megalitre process water reservoirs and a 500 kilolitre potable reservoir.

The walls of the reservoirs were divided into four quarters and were all cast in one lift. The 5 megalitre potable reservoirs each had a circumference of 135 m, and a 4 m wall height.

The VARIO wall sections were manufactured off-site. The duration for the construction of each quarter wall was as follows: two days to erect the inside formwork, two days to fix the rebar, two days to erect the outside formwork and one day to cast the concrete. The speed and ease of the wall construction led to a gain in the construction programme of a full month.

The client is particularly impressed with the off-shutter finish of the concrete, underscoring the VARIO advantage.



Riebeeck Olivier, Director:

"The on-site support and technical knowledge of the PERI team was an integral part of the project's success. Everything gets done right the first time - according to specification and beyond our expectations."





# State-of-the-art science building

Nelson Mandela Metropolitan University, Port Elizabeth

Contractor

Aveng Grinaker-LTA

Field Service

PERI Port Elizabeth



Renier van Eyk, Site Manager: "PERI delivered

"PERI delivered a notable service and to international standards." The university's new Science Building consists of three floors and a 3 000 m<sup>2</sup> parking area.

Aveng Grinaker-LTA contracted PERI as their formwork service provider for the project. PERI's technical assistance, particularly for the roof slab of the auditorium, was critical considering the oval shape of the building, the complexity of the project and the size of the down-stand beams. PERI MULTIFLEX girder slab formwork was used for support work to all in-situ concrete slabs and beams; PERI LICO column formwork was used for the 450 mm x 450 mm and 550 mm x 450 mm concrete columns; and PERI DOMINO panel formwork was used for the construction of the lift shaft, shear walls and concrete upstands.







## **ID** Construction Field Service PERI Durban

# PERI the chosen formwork at exclusive coastal estate

Zimbali Suites, Dolphin Coast, KwaZulu-Natal



Zimbali Suites is a new propsign aesthetics, which follow erty development, comprised the elements of the Zimbali of three blocks of apartments blueprint. The build began on and a car park, within Zimbali 23 January 2015 and will be Coastal Estate. These worldcompleted in June 2016. PERI class serviced suites are being engineered a solution to a late built to exceptional specificaaccess problem on site. They tions and contemporary decreated a traffic window to



## **Brian Schutte, Site Manager:**

"The service we receive from PERI is always good. The finish we achieved with DOMINO for the off-shutter walls cannot be compared - it is simply the best."

allow concrete vehicles and operations to continue by using steel I-beams to span the opening. Other formwork used was MULTIFLEX for the slabs and DOMINO for columns, stairs, lift shafts and balustrade walls.

Despite the work restriction policies of the estate - no weekend working and having to get all the workers on site by 6.30 am - contractors ID Construction managed to get the roof on within seven months.





# Architectural concrete walls achieved using VARIO formwork

Growthpoint / Illovo Corporate Offices, Umhlanga

Contractor WBHO Field Service PERI Durban





The PERI "Formwork Technology for Architectural Concrete" handbook - available on request.



**Bob Syed, Site Agent:** 

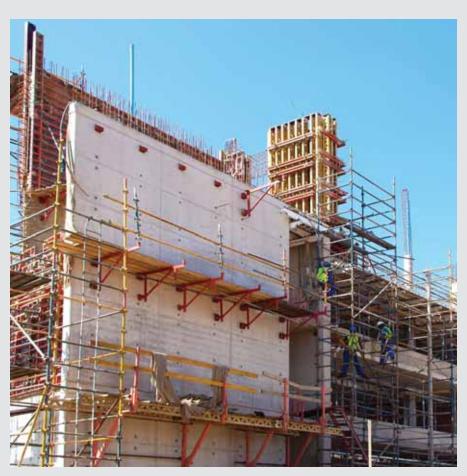
"This quality of architectural off-shutter walls could only be achieved with PERI VARIO."

This development comprises the corporate offices of Growthpoint Properties and Illovo Sugar respectively. There are four levels of shared basement parking (21 000 m²), which step in at every level as the building goes up. This leads to two independent five-storey towers which cantilever outward, terraced in both directions moving upwards.

WBHO achieved the very challenging 721 mm cantilevers using PERI MULTI-PROP on the slabs going up. Using 6 500 m<sup>2</sup> of PERI SKYDECK, they man-

aged to cast an astonishing 10 009 m<sup>2</sup> in a mere 25 days, overcoming all types of challenges and bad weather. The two lift shafts were constructed using PERI TRIO with a CB 160 climbing system.

Exposed concrete walls are a key architectural feature of the project. To achieve the required finish for these walls, WBHO selected VARIO formwork. Roughly 1 000 m² of VARIO was used on-site. Excellent finishes were achieved and the building definitely stands out on Umhlanga Ridge.





# Total formwork solution for upmarket apartment building

Key West Apartments, Milnerton, Cape Town

Contractor

Remey Construction

Sub-contractor

KCH Formwork & Construction

Field Service

PERI Cape Town



Cornis Rautenbach, Project Manager:

"Good formwork can't be used to its full potential unless backed up by good support – which PERI provided. They are very professional and always have new ideas and systems in place." PERI was the preffered formwork supplier to KCH Formwork & Construction for the construction of the 11 000 m² Key West apartment building in Milnerton, Cape Town, consisting of 114 apartments over eight floors.

Approximately 1 600 m<sup>2</sup> of PERI SKY-DECK was used as the horizontal solution and 10 boxes of PERI LICO provided the vertical solution for the project.

The client required an 850 m<sup>2</sup> horizontal pour every week, and SKYDECK, on

both the upper and lower slabs, allowed them to complete the required pours within this cycle time. Propheads were also used, as the post tentioned slabs allowed the client to move the formwork on a four-day cycle.

A first-class concrete finish requirement on the upstand beams was achieved using PERI DOMINO lined with PERI BETO and DK cones. In addition, PERI helped the client reduce costs and stick to their budget by excluding dropheads and covertips.

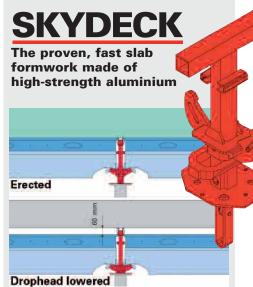












The beam is positioned below the panels and does not come into contact with the concrete.



Large 2.3 m x 1.5 m grid reduces the number of props required. Less components = less labour.



Cantilevered SKYDECK edge tables with ideally positioned guardrails for safe access to slab edges.



Large SKYDECK pallet allows 54 m² of formwork surface to be moved in one crane lift.

# Safe formwork solutions for bridge expansion on a busy highway

Simon Vermooten Bridge, Pretoria

Contractor
Liviero
Field Service
PERI Midrand

PERI formwork and design expertise were used to great effect on the widening of the bridge on Simon Vermooten road in Pretoria. Due to the influx of traffic on that road the existing bridge was widened by constructing new bridges on either side. With extremely high volumes of traffic crossing the existing bridge, and equally high traffic volumes on the N12 underneath, this made for a daunting project. With the highway in full use, special spanning members were made, horizontally pairing two IPE sections together with lattice bracing. This created a traffic envelope of approximately 10 m clear span and an overhead clearance of 5 m.

One of the most challenging aspects of the project was that the ground level varied considerably over the length and width of both bridges, despite rigorous ground preparation. The staging for the new bridges was done with QUICK-SHORE. Both new bridges were constructed 700 mm higher than the existing bridge, which had to be lifted to form one bridge. The soffits on both bridges had cambers in both directions, which had to be catered for. The PERI



### André Theron, Project Manager:

"PERI's vast experience, gained from a diverse product portfolio around the world, allows them to offer innovative solutions for effective and economical formwork."

team opted to insert special packers between the primary and secondary bearers to achieve the camber easily and safely.

The piers were challenging due their size and the high quality finish reguired. The PERI team had a limited timeframe in which to fabricate the VARIO pier shutters and the special trusses. They decided to cast the piers monolithically, catering for the significantly increased fresh concrete pressure in the formwork. Two pier shutters were manufactured and used for four cycles. The side forms were manufactured in the VARIO workshop using old GT girders, which resulted in huge savings for the customer and definitely contributed to the overall success of the project.





# Technically challenging parkade and bridge project

Maxwell Parkade and Bridge, Midrand

Contractor
Archstone Construction
Field Service
PERI Midrand



André Kock, Project Manager:
"PERI has an excellent design and technical support team."



A large parkade and bridge form the base of a land-scaped area at the entrance to the Mall of Africa in Waterfall City, a 330 ha mixed-use commercial estate in Midrand, Gauteng.

A total of 2 057 m<sup>3</sup> of concrete was poured - in five months over four pours - to form the 4 000 m<sup>2</sup> bridge with architectural steel enhancements. The propping height ranged from 5.2 m to 6.4 m, depending on the slope, with a 20 m span between columns. Conventional reinforcing and post-tensioned cables were used. Each end of the bridge had a 3 m overhang. At the one end, the overhang had to be supported from the parking slab and at the opposite end, it had to span a 4.5 m embankment of sloping soil, which was not suitable to deck from. This was

achieved by using MULTI-PROP towers and steel beams that rested on top of concrete plinths which had to carry 200 kN.

The adjacent 40 000 m<sup>2</sup> parking structure included a transfer slab at the top level which had to be able to carry a 1.5 m soil filling, so that the client could create the grass terrace on top. Formwork Logic, the labour contractor, purchased 5 000 m<sup>2</sup> of MULTIFLEX from PERI, including plywood for this project. The support consisted of a line of QUICK-SHORE towers under the downstand beams, with one line of support between adjacent beams to support the slabs. This method reduced the amount of shoring needed by half, which means the contractor saved time and money with erecting and striking.





# Efficient formwork solutions for port terminal storage areas

Transnet Port Terminals, Richards Bay

Contractor Stefanutti Stocks Civils Field Service PERI Richards Bay

As part of the Transnet Group's market demand strategy, Transnet Port Terminals required additional open storage areas to stockpile increased quantities of commodities destined for export through the Port of Richards Bay.

Stefanutti Stocks Civils KwaZulu-Natal were contracted to construct the pile caps, columns, division walls and Ubeams to support the distribution conveyors for a new stockpile area of approximately 31 000 m<sup>2</sup>.

VARIO, DOMINO, QUICKSTAGE and

MULTIFLEX formwork systems were used during the construction of the columns, the bases and the 14 decks.

The challenging seven-and-a-half-month programme required detailed day to day planning and monitoring. Despite difficulties, like the month-long metal industry strike, which effectively halted deliveries in July 2014, they still managed to stay ahead of programme and successfully completed the project ahead of schedule in December 2014 while all of Transnet's stringent standards with regards to SHEQ requirements were also met.



### Leigh Dressing, Project Manager:

"We owe a big portion of our success to the professionalism and engineering solutions provided by PERI."













# MULTIFLEX slab formwork of choice for international call centre

CCI Call Centre, Umhlanga

Contractor
J.T. Ross
Field Service
PERI Durban





Brandon van Zyl, Site Manager:
"MULTIFLEX is the perfect system to
deal with the complexities of slabs."

The CCI Call Centre in Umhlanga, KwaZulu-Natal is an international call centre group that provides outsourced customer contact services. The R200 m building now houses more than 200 employees. Some of the UK's leading brands, primarily in mobile technology, telecommunications and finance, are supported by CCI.

J.T. Ross used the MULTIFLEX system, which is ideal for complex slab work, for all the slabs in both the office block and the parking lot. The system delivered smooth, clean soffits and reduced the number of components so that, at the end of this project, the formwork losses were negligible. The feature columns along the entrance perimeter were achieved using VARIO column boxes.



# PERI systems' ease of use benefits shopping centre upgrade

Crossings Shopping Complex, Mbombela

Contractor
Ikotwe Construction
Field Service
PERI Mbombela

Ikotwe Construction recently completed additions and alterations to the Crossing Shopping Centre, located on the corner of the N4 and Madiba Drive in Mbombela, Mpumalanga.

The project had a particularly tight schedule and, to save time between cycles, the client needed systems that could be easily assembled. They chose PERI, which they used for the first time on this project. After just a few hours of on-site training, the Ikotwe team were very impressed with the ease of use of the systems.

A total of 25 000 m² of slabs were poured successfully and quickly. SKYDECK was the ideal solution for 20 000 m² of post-tensioned slabs. It also saved time on assembly because of easy loading and quick stripping. For the more than 5 000 m² of double volume coffer slabs, Ikotwe required a system which could be cycled continuously, for which PERI provided MULTIFLEX, used with waffle moulds, MULTIPROP 625 and MRK frames.

LICO column formwork was used for the columns, which exceeded 5 m in height, and DOMINO for beams up to 1.2 m in height and slabs exceeding 750 mm in thickness.



### Charl Stassen, Project Manager:

"The PERI systems, design, service delivery, both on and off site, makes it possible to take on this kind of project and deliver quality work."







# Creative formwork for energy giant's new head office in Sandton

Sasol Head Office, Johannesburg

Contractor
Aveng Grinaker–LTA
Field Service

PERI Midrand



# Timothy Rowbottom, Contracts Manager:

"SKYDECK effectively addresses the issues of time, quality and cost. It is extremely versatile and can be adapted to accommodate just about any decking issue."



For the construction of new headquarters for Sasol in Sandton, Gauteng, PERI supplied formwork to Aveng Grinaker–LTA. The building is essentially a floating glass box hovering above indigenous parkland on a curved edge of the street. It will have seven basement levels, 10 storeys above ground, and will accommodate up to 7 000 people.

A central core ties the building together and the various areas are linked by a series of bridges. The concept of open, transparent work spaces is supplemented with restaurants, canteens, art galleries, coffee shops and a Sasol One Stop Shop. Externally, the park-like staff facilities include courtyards, barbeque and yoga facilities and landscaped gardens. The 70 000 m² building needed to be well con-

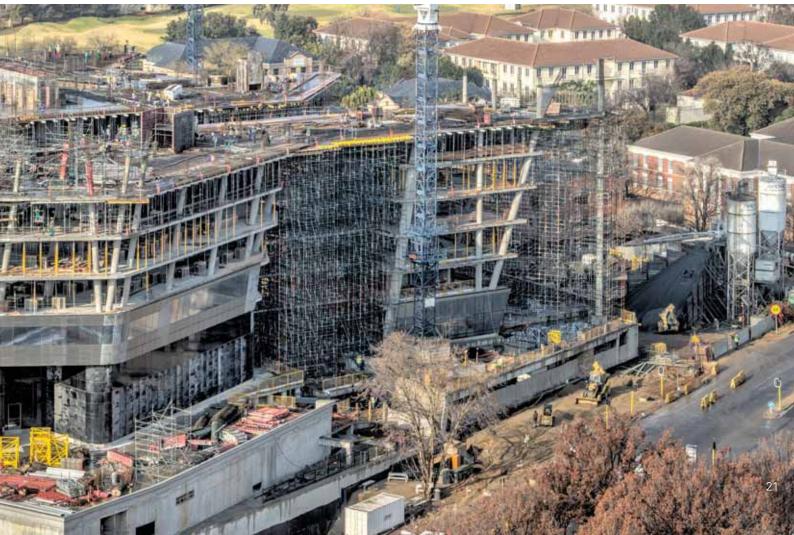
nected both vertically and horizontally.

PERI used the SKYDECK Main Beam SLT 375 in combination with MULTIPROP towers and anchor chains to form the edge solution. The introduction of different elements for the slab construction allowed the decking crews to get through the complex structure with minimum hassle.

The versatility, ease and light-weight nature of SKYDECK proved to be invaluable given the tight construction schedule. The vertical formwork elements were designed with PERI's successful TRIO system. All shafts – at one stage more than 12 in number – used TRIO panels. A climbing system was introduced on the most critical lift shaft, which worked out very well.







# Efficient formwork helps contractor meet tight deadline

CMH Datcentre, Durban



# Greg Steen and Richard Moffat, Site Managers:

"PERI products are easy and quick to use, as can be seen by the speed at which this building has gone up!"

The CMH Datcentre in central Durban is a new Nissan dealership – the largest in KwaZulu-Natal. The building is part of local government's inner city rejuvenation project and, as such, offers public parking on the upper levels to help ease congestion in the city.

This was a project on very large scale – almost a million bricks were used and more than a kilometre of concrete was used in the upstanding walls. Contractors Jacoby Nicols also faced a very tight schedule, which PERI helped them achieve. PERI DOMINO was used for the columns and lift shaft, TRIO for the stair shaft, MULTIFLEX for the sloped ramps and SKYDECK for the slabs. Occupation was on 1 December 2015.





# High productivity with VARIO for high-level bridge

Umdloti, KwaZulu-Natal

Contractor
Group Five
Field Service
PERI Durban

A new high-level bridge structure on the N2 at Umdloti now provides a permanent, safe link over the Umdloti River, to replace the previous unsafe low-level causeway.

Group Five chose PERI VARIO for the incremental launch formwork on the project, which also comprised the widening of the roadway by approximately 7.5 m at select points along the freeway.

The cost effective VARIO shutters allowed Group Five to utilise two sets of

shutters for the same price as one set of conventional steel shutters, which meant that they could cast the south and north bound sections simultaneously. This assisted in achieving the tight programme deadline.

The massive piers were poured in 8.1 m increments using PERITRIO with customised box-outs to create the recess in the concrete. CB Brackets were used as access platforms to replace temporary bearing platforms with permanent ones.



Engineer:
"For the piers, the
TRIO box out shutters worked ex-

tremely well."

Warren Dalais, Site









# Largest single commercial development in Africa

Discovery Head Office, Sandton, Johannesburg

Contractor
TIBER / WBHO JV
Field Service
PERI Midrand

Trevor Dillon, Tiber Contracts Manager and Tinie Bonnet, WBHO Contracts Manager:

"Our companies' vast experience and knowledge, along with PERI's dedication and commitment, will without a doubt make this a successful project." PERI South Africa has been contracted to supply formwork for the prestigious new Discovery Head Office in Africa's richest square mile, Sandton. The development, described as the "largest single commercial development in Africa", will no doubt become a landmark.

The building has been designed to be resource efficient, cost-effective and environmentally sustainable. It will comprise of two wings with eight floors of offices, a ground floor and a roof level. It will also offer nine basements with more than 5 100 parking bays. The €180 million development is set for phased completion

over four years, with the first superstructure of  $300\ 000\ m^2$  to be completed by the end of 2016.

Two of the top ranked construction companies in South Africa, Tiber Construction and WBHO JV, have been appointed to construct the highly complex and multifaceted structure and rely on PERI's ability to guarantee the supply of good quality formwork. PERI systems on site include 8 000 m² SKYDECK, 2 000 m² VARIO, TRIO, DOMINO and access platforms. Thus far, SKYDECK has produced phenominal cycle times on the slabs, averaging 12 500 m² per 10-day cycle.



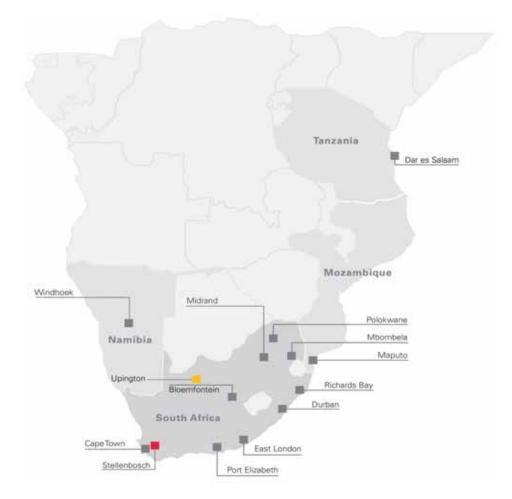








# PERI in Southern Africa



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Legend

PERI BranchSales Office

■ Head Office (Group Services)

PERI Formwork Scaffolding Engineering is rapidly expanding into Sub-Saharan Africa. It currently serves its clients from four countries, boasting eleven branches and four sales offices.

PERI always focuses on providing the best possible solution for each and every building project. For more than 40 years, PERI has been considered the competent partner of construction companies for all appli-

cations in the area of formwork and scaffolding technology. Extensive PERI services are presently provided by 61 independent subsidiary companies and 110 efficient storage sites in more than 95 countries.

### **LATEST**

## The PERI Handbook

Who we are and what we do can be found in the latest PERI Handbook.

The printed version, available in eleven languages, features new and proven formwork and scaffolding systems, practical services as well as numerous projects from around the world in which our solutions have contributed to their success.

You can order your own free copy at www.peri.co.za/brochures





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