

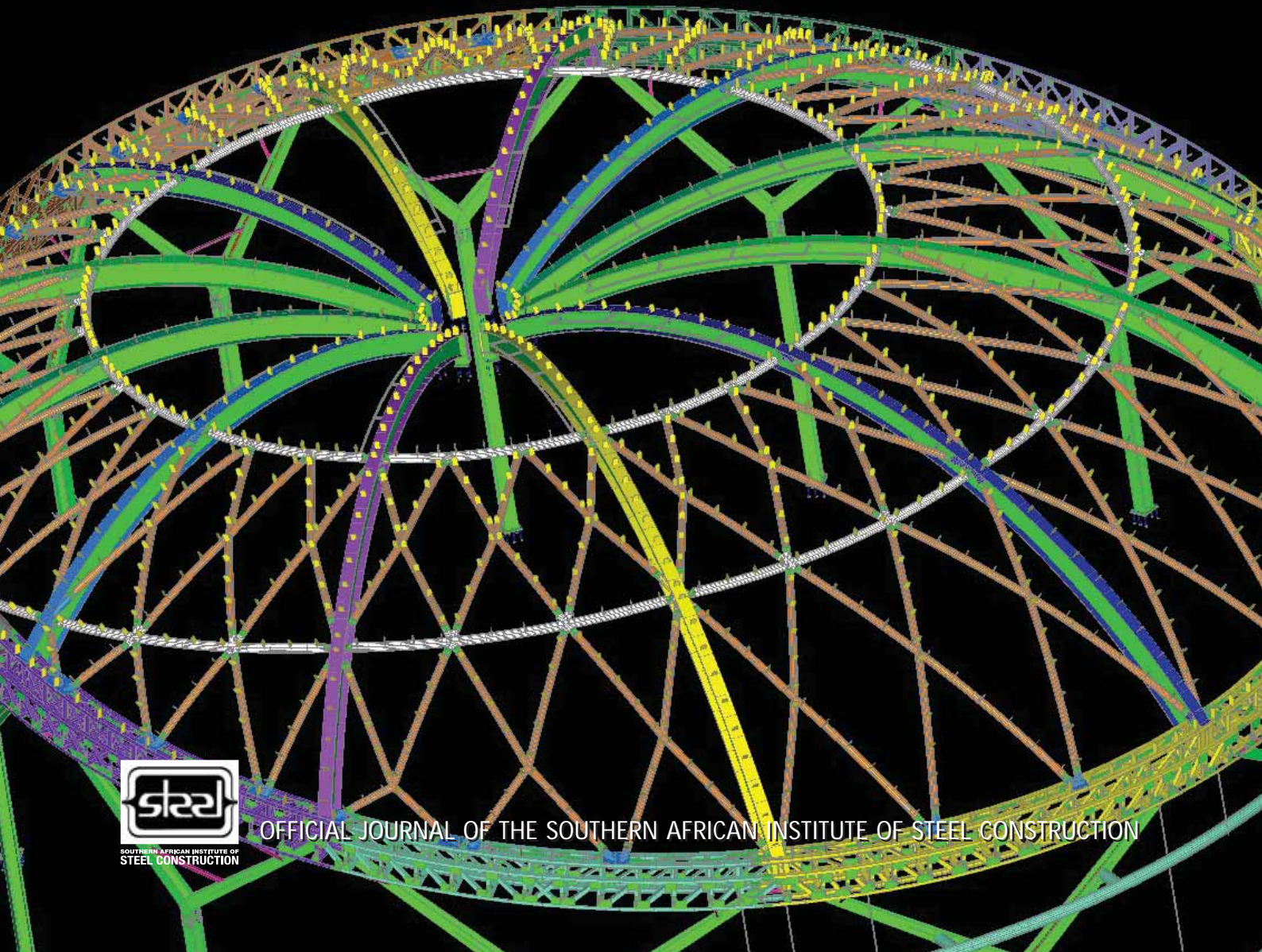
# steel CONSTRUCTION

Volume 35 No. 5 2011



## STEEL AWARDS 2011 WINNERS AND ENTRIES

MAIN SPONSOR



OFFICIAL JOURNAL OF THE SOUTHERN AFRICAN INSTITUTE OF STEEL CONSTRUCTION





## EDITOR'S NOTE

So what is Steel Awards about? Yes, it is about the celebration of excellence in the use of structural steel. It is also about celebrating South Africa's skills, products and achievements. But if you look closer at any of these projects, what it really is about is the people behind the final result. The team members' work relationships with each other are a pivotal ingredient to the success of the project. Sure, personalities sometimes clash or there are differences of opinion, but if there is no communication, no human interaction (no matter how flawed) there is very little chance of the project actually being completed.

So this year in the Steel Construction journal's Steel Awards Issue we looked a bit at the people behind the projects and asked them to tell us about their contribution, the challenges and what made the experience worth it. If you read them you will see a common thread: "The collaboration of the people involved in the project made it happen."

We also asked our sponsors to introduce their men and women behind the successful businesses they run. Without these leaders' confidence in and support of the Institute – this event and this journal would not have been what it is.

Despite the virtual world we are busy creating, the person with his or her network of friends and business contacts is still the centre of it all – e.g. Facebook, LinkedIn, Twitter etc. Steel Awards this year brings the two together with 'fooling around' with technology, but also providing the tried and trusted way of getting to know the people in your industry – one on one over a glass of wine enjoying a fine evening.

*In memory of Louise Warden, my dearest friend and colleague (1967 – 2011).*

VOL. 35 No. 5 2011

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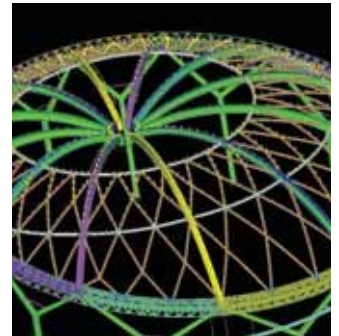
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*The Steel Construction journal supports the freedom of media and speech implicitly enshrined in our Constitution (Article 16).*



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Front Cover  
Overall winner: Protea Court Rooflight

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## SAISC COMMENT

By Dr Hennie de Clercq,  
Executive Director, SAISC

*What really turns the judges on is when they see how somebody has shown a deep understanding of what you can do with steelwork and come up with an idea that would not have worked in another material.*

### WHAT MAKES A WINNER?

It's Steel Awards time again; time to celebrate what people in South Africa have achieved with structural steel this past year. The winners and the other entries are presented in this journal and to all of them I say: you make us proud. Good work!

The judges of the Steel Awards competition have great freedom to give an award to just about who and what they want. They certainly are not constrained by a strict set of rules. And yet, we have, throughout the years, received very, very few complaints or even adverse comments about which projects received awards.

Maybe the secret to the success of the judging process can be found in the fact that the person – Leslie Harrah – who for many years used to receive the awards entries before handing them over to the judges always 'chose' the winner as soon as she had all the entries. In the vast majority of cases the judges came, miraculously and after much soul searching, to the same conclusion!

This suggests, besides Leslie having a good feel for the psychology of competition judges, that there is something, some quality, that makes a project stand out and say: "Award me!"

Not being one of the judges myself, I can only emulate Leslie in trying to understand how their heads work. And it is clear to me that the first thing they look for is that there should be something unusual to a project. It would be a contradiction in terms if you awarded something that is just a repeat of what has been done thousands of times. But there are many things that can make a project exceptional, from being for an unusual purpose (think SALT observatory or Marion Island) to utilising an uncommon structural concept (for example the roof of the Cape Town Stadium). It is even conceivable that exceptionality can flow from being repeated thousands of times. Requiring an extraordinary approach in construction certainly works.

It is also clear that the judges look for something that's clever. If one can demonstrate to them that you have come up with a solution that not everybody else would have thought about, and it works, you're halfway there. What really turns the judges on is when they see how somebody has shown a deep understanding of what you can do with steelwork and come up with an idea that would not have worked in another material.

But some pretty interesting structures did not make it to the final round over the years because of shoddy execution (sorry, but you won't get examples out of me). If the design is basically brilliant but has not been thought through properly or it is lacking in its details it gets shot down. Bad welding or other signs of poor construction has resulted in a call to the engineer to warn him/her of an impending problem and summary deletion from the shortlist.

A good presentation including some really good photographs is necessary to get on the shortlist (and helps the organisers of the competition and the video makers hugely).

Then there's aesthetics. Take it for granted: if a project looks great it's difficult to ignore (the World Cup stadiums are again a good example). Obviously, if the project is an architectural wonder it gets special attention, but the judges are very much aware of the fact that steel structures can be attractive in more than one way. An industrial structure can be so well conceived, so orderly and so neatly executed that it stirs admiration, even if it is bulky and angular. It can just 'look right'.

A project that's big and prominent and important has a definite advantage, as long as it meets the other requirements. A purpose of Steel Awards is, after all, to draw attention to steel as a construction material and not only to recognise the achievements of the individuals and companies in the industry. The Cape Town International Convention Centre was an example: it met all the other requirements, but it was also a project that had to be treated with respect. A problem related to this can be: do you award the steelwork or the project as a whole? This can be a difficult one requiring the wisdom of the judges, but it is rather difficult to recognise a great structure hidden in an otherwise abominable project. The player of the match seldom comes from the losing team!



# OVERALL WINNER: PROTEA COURT ROOFLIGHT

*But in assessing excellence in the use of steelwork, in all aspects – architecturally, structurally, the manner in which all the challenges have been solved and just sheer technical excellence – there is no doubt that the Protea Court Rooflight in Sandton can take its place as an overall winner, with pride, amongst its predecessors.*

It is a number of years since the overall winner of Steel Awards was an architectural type project. But when this type of project wins, it wins big!

To be sure this elegant rooflight cannot be compared in size to anything that has been a winner in recent years. In fact, it is minute when compared with some of the soccer stadiums. But in assessing excellence in the use of steelwork, in all aspects – architecturally, structurally, the manner in which all the challenges have been solved and just sheer technical excellence – there is no doubt that the Protea Court Rooflight in Sandton can take its place as an overall winner, with pride, amongst its predecessors.

In a first for South Africa, the roof is clad in EFTE (plastic bag like) covering. The reinforced plastic bags are kept inflated with compressed air. The rooflight joins a list of illustrious projects such as the Water Cube in Beijing and the Eden project in Cornwall and certainly does much to enhance the adaptability of the material.

From a bird's eye view the structure looks just "oh so simple". After all, how difficult can it be to construct some spokes of two wheels of different diameter within each other but having different origins?

Now add in the 3rd (vertical) dimension, slope the whole base of the outer support circle, and curve each of the spokes in elevation to appear a bit like a fountain with a near central discharge or as some have described it, to look like a Protea flower.

Now it really turns into a 'structural' challenge of note. The outer circle is 44m in plan diameter, the whole structure slopes at 11° which results in eaves heights that vary by more than 8.5 metres. The roof beams are at 30° to each other, are made up of radiused in elevation, tapering plate girders and are supported internally on a reinforced concrete tower and externally on a latticed box girder. The boxed girder is supported on 12 bifurcated column heads. There is some additional steelwork to support glazing on some of the elevations below the roof light. Even the secondary tubular members between the rafters are curved, making every single piece of steel its own masterpiece that is different from any other except for their opposite hand partners.

Clearly the success of such a project needs a lead architect who understands the issues, an experienced steel design engineer, a steelwork specialist contractor and an experienced and competent main contractor, who between them were able to get the geometry right, get the steelwork design right and with close cooperation the team



were able to convert this enormously complex design into a buildable project despite all the difficulties the geometry could throw at them.

## THE DETAILERS VIEW POINT

The comments of the detailer make for interesting reading, from first "what the hell did I get myself into?" to why does the layout not work, to how the various parties together worked at making the layout for the structure work i.e. make it 'buildable'.

And even when the input into the 3D detailing package was correct, how does one print out the drawings such that the workshop team can work from them? To ensure that the workshop did get the fabrication right, all sorts of practical check dimensions had to be calculated and worked with.

From the steel detailers layout, the EFTE cladding contractor from the UK detailed his clamps and then came back to the detailer to identify exactly where each of the 1 468 support points needed to be, once again causing a rework of the details.

## JUDGES' COMMENT

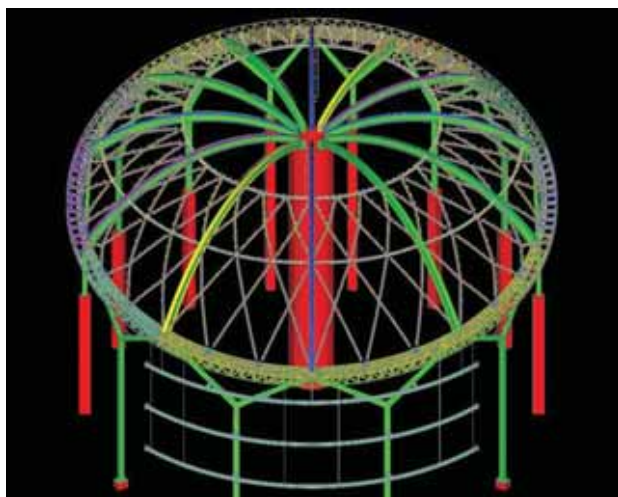
By Steve Mackie, representing the JSD for SAICE

The imaginative use of steel is beautifully displayed in the new Protea Court Rooflight on the south eastern corner of the Sandton City shopping centre.

There is absolutely no doubt that without modern computer aided draughting capability, even as recently as a decade or so ago a project like this would in all probability not have been buildable! It just shows you what can be done using great co-operation and modern techniques and good old blood sweat and (a few) tears!

The stupendous effort by architect, engineer and fabricator has launched an awe-inspiring structural steel building of truly international standard that could only be done in steel and which will keep South Africa in the forefront of technology well into the 21st century.

This project is truly deserving of overall winner of the Steel Awards 2011 competition. It is a display of excellence of the highest order in the use of structural steel and the skills that went into making this project the masterpiece it is.





Dennis Nash.



Tim Tasioulas.



Rob Mylroie.



Duane Jolley.

## THE PERSPECTIVE OF THE STEELWORK CONTRACTOR

"From the minute we saw the drawings we realised that we were in for a huge challenge, not only for the workshop but for each and everyone involved in the project".

The workshop had to be 100% sure that each and every dimension was correct, no mean feat when the tapering, curved girders up to 27m long need to be assembled, welded and checked to an accuracy of 2mm.

Just handling the girders was a problem. But as with all difficult jobs, as you go through the learning curve stage "we got better and better with some practice".

## THE ERECTOR'S CHALLENGES

First and foremost of these was the need for absolute accuracy of those 1 468 cladding support brackets. Then to make life just a bit more fun, the 11° slope, the gangly nature of the 27m long girders, the temporary instability of the structure until completely erected and tied permanently to the their concrete support walls, the very tight programme, the fact that most of steelwork was erected over the Christmas break all presented challenges that much to the credit of the team, were solved.

To ensure the accuracy of the erection, a number of survey controls were installed before erection started to enable the structure to be monitored continually. Twelve optical plumb points were mounted at the slab level which allowed the perimeter gutter girders' position to be checked as erection proceeded and ended up being invaluable in fixing the structure in its final 'correct' position.

The setting of the cladding support brackets between the main roof structure and the aluminium rails had to be done individually (all 1 468 of them!) using manual survey means to ensure the accuracy that was required by the cladding contractor.

## COMMENTS FROM SOME MEMBERS OF THE PROJECT TEAM

### Structural Engineer

*Dennis Nash, Engineering Director, AKI (now part of the Aurecon Group)*

*"The successful completion of the Protea Court Rooflight is a direct result of the commitment and working relationships of the professional team, main contractor and steelwork contractor.*

*From an engineering perspective it has been a very demanding project but without doubt the most satisfying."*

### Steelwork Contractor

*Tim Tasioulas, Managing Director, Tass Engineering*

*"The success of this project can be attributed to the high level of commitment and communication between the professional team, the main contractor and ourselves. This was a significantly challenging project and I am proud of the team at Tass Engineering and Cadcon for their dedication, effort and commitment."*

*Rob Mylroie, Construction Manager, Tass Engineering*

*"The Sandton Protea Court Rooflight has been an extremely prestigious project for our company which introduces new technology to the South African market and gives renewed exposure to what can be achieved with steel when one couples innovative design with sound construction practices."*

### Main Contractor

*Duane Jolley, Site Agent, WBHO Construction North (WBHO was part of the Sandton City Joint Venture with GLTA)*

*"It was a 3 dimensional challenge that has opened up many more dimensions of creative problem solving to achieve success."*

## project team

### Developer/Owner:

Liberty Group and Pareto Limited

### Architect:

MDS Architecture in association with MMA Architects

### Structural Engineer:

AKI (now part of Aurecon Group)

### Quantity Surveyor:

MLC in association with Crane QS

### Project Manager:

GHC Bryden Project Management (Pty) Ltd

### Main Contractor:

Sandton City Joint Venture: GLTA & WBHO

### Steelwork Contractor/s:

Tass Engineering (Pty) Ltd

Cadcon (Pty) Ltd (sub contractor)

### Detailers/Detailing Company:

3D Struct

### Erector:

Onpar Steel Erection Works cc





## AVENG GROUP

*The Aveng Group has made a positive contribution in the economies where it is active, building public infrastructure spanning bridges, dams, ports, roads, mines, stadiums, airports and power stations that today form the backbone of the economies of many developing world countries.*

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Aveng Group, main sponsor of the annual Steel Awards for the second year in a row, is South Africa's largest infrastructure company listed on the JSE operating in over thirty countries across the globe. With a broad exposure across the infrastructure value chain, the Aveng Group has capability to deliver multi-disciplinary projects in construction, engineering, mining, water, power, steel and manufacturing.

In 2011 they celebrate the new look of a unified brand and have also welcomed Aveng Water as an addition to the Aveng Group family. Aveng Water is positioned to play a key role in the delivery of advanced water solutions in southern Africa, South America and Australia. It is driven by a highly qualified team experienced in implementing custom designed, innovative water treatment solutions.

The Aveng Group has made a positive contribution in the economies where it is active, building public infrastructure spanning bridges, dams, ports, roads, mines, stadiums, airports and power stations that today form the backbone of the economies of many developing world countries.

Showcasing but a few of the capabilities of the Aveng Group, the following subsidiary companies within the Aveng Group are proudly associated with Steel Awards 2011:

**Aveng Grinaker-LTA** is a multi-disciplinary construction group, anchored in South Africa and focused on selected infrastructure, energy and mining opportunities in Africa. The company offers a comprehensive range of standalone or integrated services that cover building, civil engineering, concessions, earth-works engineering, mechanical and electrical, mining and property development.

**Aveng Grinaker-LTA Mechanical & Electrical** business unit in Aveng Grinaker-LTA provides comprehensive fabrication and construction services in structural steel, mechanical, piping, electrical and instrumentation installations



The Aveng Group: One brand family.

as well as commissioning in the metals and minerals, oil and gas and energy sections.

**Aveng Grinaker-LTA Mechanical and Electrical DSE Fabrication**, the structural steel fabrication division specialises in design, structural detailing and fabrication. This includes painting of structural steelwork and plate work.

The 65 000m<sup>2</sup> under-cover fabrication facility is based in Vanderbijlpark. State-of-the-art equipment includes CNC drilling and punching lines, automatic welding machines, in-house shot blasting and painting facilities and a range of overhead cranes and other equipment with a maximum lifting capacity of 200 tons. The pipe spool fabrication facility at Vanderbijlpark complements turnkey operations and has a capacity of 40 000 diameter inches per month.

**Aveng Grinaker-LTA Metals and Minerals** is the construction operating division within Aveng Grinaker-LTA Mechanical and Electrical. Metals and Minerals focuses on the mining processes, steel and iron making and mineral recovery plants. They have their own experienced construction crews that operate in all construction disciplines and are backed up by a large fleet of cranes.

**Aveng Grinaker-LTA Oil & Gas** is the market leader in providing specialised teams for turnarounds and maintenance at any refinery. Experienced, coded welders are trained specifically for this industry and the Oil & Gas division brings safety-focussed skills that are vital in high-risk environments.

**Aveng Trident Steel** supplies a wide product range to the steel industry in South Africa, as well as Sub-Saharan Africa, from its extensive steel yards where they stock a vast range of structural steel sections, plate and sheet products in a wide range of sizes. Other divisions such as modern and comprehensive steel processing and steel service centres, the speciality steel division and tube manufacturing plant add to what makes them the preferred choice.

In addition to their main facility at Roodekop, Gauteng, branches around the country assist in Aveng Trident Steel's objective of delivering confirmed orders between 24-48 hours. Aveng Trident Steel's strength lies in both the extent and range of its construction and engineering carbon steels in various qualities.

Aveng Trident Steel also has a comprehensive service centre that offers plate and sheet cut to size including sections cut to length. Processes offered for plate cutting are by means of their world class, fully computerised, high definition plasma, laser and normal gas cutting equipment. Further options include guillotining, chamfering, bending and hard marking.

Their supply reputation is built around extensive steel yards, which are laid out to maximise space utilisation and to achieve fast turnaround times. Delivery, when actually needed, saves the customer stockholding costs.

**Aveng Manufacturing** consists of four business units, namely Steeledale, a market leader in beneficiating steel reinforcing bars and mesh for concrete structures; Infraset, which manufactures concrete products for the infrastructural market – from rail to landscaping; Duraset, which manufactures steel and concrete products for the mining industry; and Lennings Rail Services, which provides a highly sophisticated range of construction and maintenance services for its rail customers.

**Aveng Manufacturing Steeledale** has a number of products which range from pre-assembled reinforcing mats, cages, welded cages and welded mesh, to FBE lattice beam slab systems, an alternative to the conventional suspended slab.



Platform steelwork in a Karrena chimney at Medupi Power Station.





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*Cadex SA is the regional reseller of  
Tekla Structures for Sub-Saharan  
Africa and the Indian Ocean Islands.*

Cadex SA was started in the late 1990's by experienced professional engineers to improve the delivery and execution of structures. This experience in the design, detailing and construction of steelwork, concrete and structures of other materials, combined with superb BIM software from Tekla has empowered our customers and their clients to outperform users on other platforms.

Tekla Structures is the structures modelling software programme that reduces errors, increases productivity and provides a high level of project management and automated fabrication by interfacing with management information systems (MIS) and CNC machinery.

### TEKLA STRUCTURES PRODUCTS FOR STEEL CONSTRUCTION

Fragmented, inaccurate or delayed information leads to problems with the delivery process and project costs.

Tekla Structures BIM (Building Information Modelling) software provides an accurate, detailed, and data rich 3D environment that can be shared by structural engineers, architects, concrete rebar detailers, steel detailers, steel fabricators, project managers and clients. At every stage the detailed models enable the highest level of constructability and production control.

### CONSTRUCTION MANAGEMENT

Data pertaining to design, fabrication, manufacture, supply, cost, installation – the key data needed for project delivery – can be embedded in

the Tekla BIM model. Tekla Structures interfaces with other leading construction management and design software if required. This allows the project to be managed proactively using an intelligent visual system.

Tekla Structures helps the project team manage the risk of unforeseen costs and the loss of time during the project delivery stage.

### ENGINEERING

Structural engineers can use Tekla Structures to improve efficiency and deliverables in their traditional role or to widen their role in building and engineering projects. The Tekla Structures Open BIM model integrates and interfaces with architectural and analysis and design software used by engineers.

Tekla Structures enables engineers to deliver first class projects from simple small routine structures to large complex integrated projects – in all structural materials especially concrete and steel.

### STEEL

Tekla Structures is the most advanced and integrated way to manage the shop-detailing, fabrication and erection of all steel structures.

Tekla Structures is a model based system that reduces errors, increases productivity, and provides the highest levels of automation of fabrication and project management by interfacing with MIS and with CNC machinery.

Visit [www.tekla.com](http://www.tekla.com) for details about more configurations and tools.

### CADEX SA SERVICES

#### Technical support

Cadex SA's goal is for our customers to be satisfied and productive users, capable of providing high levels of service to their clients. The Software Maintenance Agreement benefits users by providing them with support, upgrades and fast efficient help when required.

Users on maintenance get access to the Tekla Extranet – an experienced and helpful online community of Tekla users.

#### Training

Cadex SA provides new and experienced users with training on the different Tekla Structures configurations. Regular training courses are available. Training ensures effective implementation of Tekla Structures and develops user competence.

#### Skill-up training

Cadex SA arranges in-house and on-site skill-up training, assisting users to expand their knowledge and the skills. These sessions deal with anything from innovative approaches to difficult or complex structures to simple productivity skills and to learning new features in new releases.

#### Product version updates

Tekla develops improved software year after year making users more and more productive. Tekla Structures product version updates are available to users with current Software Maintenance Agreements without additional charges.

#### Additional services

Cadex SA maintains the Tekla Structures local environment. This includes up-to-date catalogues of steel profiles, bolts, steel and concrete grades as well as standard connections from the SAISC Red Book. Customers, with current maintenance agreements, are thus ensured of operating at the cutting edge.



The Association of  
STEEL TUBE AND PIPE MANUFACTURERS  
of South Africa

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The Association of Steel Tube and Pipe Manufacturers of South Africa (ASTPM) was formed in 1983 to represent the welded carbon steel tube and pipe producers. The members account for approximately 90% of the installed capacity. Their contact details, product range and all other relevant information are available on our website [www.astpm.com](http://www.astpm.com).

The executive of the management committee is made up of a representative from each member as well as Neil Rose (President), Robert Subotsky (Vice President), Colin Shaw (Executive Director) and Margaret Olivier (Secretary).

During the 28 years existence of the Association the members have loyally supplied the local market and have also exported in excess of 1.5 million tons of tube and pipe to over 50 countries. This has only been achieved due to the top-quality product that these members produce which is in compliance with both local and international specifications.

The new Grade S355 Structural Tubing was launched in the beginning of 2010 and this lighter and stronger steel tubing has already been used in current projects and will also be used in all future tubular structural projects for many years to come.

Our members have recently invested in new value added plasma and laser cutting technology. These products are now more user-friendly specially with connections and save time and labour costs for the fabricator/erectors, enabling them to pass the savings on to their customers.

The ASTPM is pleased to continue their sponsorship for this worthy award, now and into the future.



## MACSTEEL

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### Optimising the value in steel supply management to new levels

Macsteel Service Centres SA forms the African component of the global Macsteel Holdings Group and is the leading steel service centre company on the African continent.

Consisting of 11 dynamic business units and operating from a network of 71 service centres, branches and warehouses, Macsteel Service Centres SA supplies the entire sub-Saharan geographic region with the full range of carbon steel, special steel, stainless steel, aluminium and value added steel products and processes to all sectors of industry.

Macsteel Service Centres SA has an excellent track record of service to the Southern African industry. Longstanding partnerships and supply agreements with a number of small, medium and large companies bear testimony to Macsteel's commitment and focus on satisfying their diverse steel requirements.

Macsteel Service Centres SA's extensive stockholding and comprehensive product range combined with its technical expertise and continuous improvement initiatives continue to enhance its reputation as the pre-eminent supplier of steel and value added services to industry.

The recently commissioned multi-million rand Macsteel Stretcher Leveler adds significant value to industry by converting steel coil into sheet and plate that is completely flat and stress free. The process is able to overcome inherent coil problems such as coil set, cross bow, edge waves and centre buckles. The final result is a significant reduction in manufacturing costs, lower scrap loss, reduced manufacturing time and a reduction in damage to equipment.

Macsteel invites You to test their mettle and forge an enduring partnership with them as Your first steel supplier of choice!



Stewarts & Lloyds, with a 108 year old history in South Africa and 32 branches countrywide, is a household name to many. The product portfolio has grown from the traditional Stewarts & Lloyds offering, to include a wide spectrum of steel products and value added services.

The company operates in various industries such as light and general engineering, building and construction, mining, petro-chemical, automotive, etc. as well as servicing the local authorities.

Stewarts & Lloyds supplies:

- Steel and tube (sections, open sections, sheet and plate, round bar, square bar etc.),
- Pipes and fittings (conveyance pipe, seamless pipe, weld fittings, wrought steel etc.),
- Valves (a branch specialising in valves has recently opened its doors in Jet Park),
- Pumps (surface pumps, borehole pumps),
- Irrigation (for residential, commercial, sports, turf, design and technical support),
- Laser products,
- Fencing; as well as
- Value added products such as profiling, guillotining, bending, rolling and plasma cutting.

The cash and carry outlets throughout the country sell Stewarts & Lloyds' products, as well as wire, fencing, industrial hardware and security products.

To find your nearest branch, contact the customer care line on 0860 10 27 99 or visit our website at [www.stewartsandlloyds.co.za](http://www.stewartsandlloyds.co.za).



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ArcelorMittal South Africa Limited is the largest steel producer on the African continent, producing 6.4 million ton of liquid steel per annum. The company has a depth of technical and managerial expertise carefully nurtured since 1928, a reputation for reliability and a sharply defined business focus, which has forged the organisation into a modern, highly competitive supplier of steel products to the domestic and global markets.

This has been achieved through ongoing alignment with international best practices and a comprehensive understanding of the steel business environment, ensuring the company's continued global competitiveness and participation in international markets. ArcelorMittal South Africa's global standing is further underpinned by its parentage with the ArcelorMittal headquarters in Luxembourg.

ArcelorMittal is the leader in all major global markets, including automotive, construction, household appliances and packaging, with leading R&D and technology, as well as sizeable captive supplies of raw materials and outstanding distribution networks. With presence in more than 60 countries across Europe, the Americas, Asia and Africa, ArcelorMittal has a balanced geographic diversity within all the key steel markets, both developing and developed.

ArcelorMittal South Africa's steel operations comprise four major facilities. The Vanderbijlpark and Saldanha operation produce flat steel products and the Newcastle and Vereeniging operations produce long steel products.

The company's ability to operate throughout the fluctuations of the steel cycle is testimony to the success of years of intensive business re-engineering and the cultivation of a continuous improvement culture that has embedded ArcelorMittal South Africa's position among the world's lowest cash cost producers of steel.



**COSIRA GROUP**

The Cosira Group, one of the largest privately-owned steel fabricators and erectors in South Africa had humble beginnings in 1988 as a three-man family-run operation, now employs a skilled workforce of more than 2 000 staff members.

The Cosira Group provides SMEIPP turnkey project and construction solutions for the mining, industrial, power generation and petrochemical industries across sub-Saharan Africa. Through its various divisions, Cosira handles all aspects of project and construction management, planning, detailing, fabrication, piping fabrication and erection, corrosion protection, plant and logistics, site erection, electrical and instrumentation services and commissioning.

True to its entrepreneurial spirit, the company has broadened its turnkey offering through a number of initiatives, including establishing Cosira Towers, a transmission line and cellular tower business, and is actively involved throughout Africa in the telecommunications and power transmission infrastructure industries.

The Cosira Group is a member of the Southern African Institute of Steel Construction (SAISC), the International Steel Fabricators Council (ISF) and Electrical Contractors Association (SA) (ECA), and has won several awards, including overall winner of Steel Awards 2008 for the construction of part of the structural steelwork on Soweto's Maponya Mall.

The company has recently been awarded a number of prestigious contracts in the power generation and mining industries locally, and at the same time has consistently grown its pan-African footprint where currently 50% of its projects are across border.

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## B&T STEEL

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South African based company B&T Steel has over the years expanded their vision and broadened their horizons, catapulting them into the heart of the African continent. They have managed to stay true to who they are, while at the same time being flexible to give their clients exactly what they need.

Having a clear understanding of the challenges the different countries present, they attribute their success to their unwavering dedication to service and delivery excellence. This was evident during their recent ISO:9001 audit, where B&T's management's commitment was found to be of a very high level. All their systems have been truly integrated and have become part of the way everyone at the company works. No nonconformities were found as the company runs like a well oiled machine.

One of their first projects across the borders of South Africa was the detailing, fabrication and erection of a maintenance workshop at the Ohorongo Cement Plant in Namibia. Following this was the first of four warehouse projects in Mauritania on the Tassilast Mine. As a result of the success of these projects B&T Steel was contracted by the same client to erect an explosives storeroom at the Tonkolili Iron Ore Mine which is located 200km east of Freetown, Sierra Leone.

Their footprint has spread even further with the completion of a mill in Mozambique and a laboratory at the Luita Expansion Project in the DRC. Construction of workshops in Zambia and a shopping centre in Cameroon will soon be added to their impressive list of completed projects.



## GROUP FIVE

### Structured Ingenuity

Engineering Projects forms part of the construction arm of Group Five Limited and operates in the following sectors:

- Mining
- Industrial
- Power Projects
- Oil and Gas
- Electrical and Instrumentation

Its strategy is based on a foundation of multi-disciplinary construction competence with an ability to position the operation as a construction and maintenance solutions provider in partnership with suitable design, engineering and technology partners.

A comprehensive internal skills base enables the delivery of turnkey solutions across the full value chain, including:

- Structural, mechanical, electrical, instrumentation and piping (SMEIP) contracts, offering single or multi-disciplinary services in mining, industrial, power, oil and gas sectors
- Heavy lifting rigging studies and lifts
- High tension and low tension electrical
- Industrial plant shutdowns and turnarounds
- Industrial plant maintenance and service agreements

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## FIRST CUT / KALTENBACH

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### First Cut - at the cutting edge of industry

First Cut (Pty) Ltd is South Africa's leading supplier of cutting consumables and capital equipment. Key strategic partnerships and years of experience in cutting and sheet metal have enhanced the productivity of many local industries.

In response to industry demand, First Cut repositioned and sharpened its focus on capital equipment. This allows the company to offer a wider range of cutting solutions for the metal and steel processing industry, as well as for the timber, textiles and DIY trades.

First Cut has established close ties with major global players in the cutting and engineering fields, for both finished products and raw materials. It is the local sole agent for a number of leading international suppliers including Bystronic, Crippa, Everising, Kaltenbach, Olimpia 80, Sacma, Starrett, Swartze-Robitec and Wikus.

The Capital Equipment division specialises in:

- Metal cutting: bandsaws and circular saws.
- Sheet metal: laser and water jet cutting, bending, roll forming, coil processing and automation.
- Structural: drilling and cutting; plate processing; coping and welding robots; punching and shearing etc.

The Consumables division specialises in supplying and maintaining saw blading, small saws and frames – metal cutting as well as engineering tools.

First Cut has branches and distribution facilities in Johannesburg; Cape Town; Port Elizabeth; Durban and Nelspruit, facilitating quick and efficient maintenance and support.



## NJR STEEL HOLDINGS

Over the last 30 years NJR Steel has strived towards becoming a supplier of choice in ensuring that its broad range of stocked products caters for the comprehensive needs of our existing customer base as well as the needs of the broad South African steel sector.

Represented in five provinces, our branches stock a range of structural steel sections, hollow and open sections, construction reinforcing bar and mesh, flat products ranging from heavy plate to thin gauge steel sheets, cold rolled, galvanised and colour-coated sheets, as well as other products including cladding, roofing, and fencing products.

NJR Steel's core merchant businesses are supplemented through investments in decentralised steel service capabilities and reinforcing, through cutting and bending yards, steel coil processing and blanking, structural steel section sawing, drilling and marking, plasma cutting and palisade manufacturing.

The continuous and focused introduction of a broad range of steel related accessories and hardware products in every branch creates a 'one stop' shopping alternative, catering for the large construction customer, all the way through to the DIY client.

NJR Steel is committed towards its social responsibility and has given extensive financial and development support to the Refilwe Community Project in Lanseria, through education as well as transferring skills to the Refilwe community.

When taking into account the scope of products, stock holding, and a delivery fleet in excess of 120 vehicles, NJR Steel is well positioned to consistently offer its customers high levels of service at the right price.

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## TUBULAR HOLDINGS

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Tubular Holdings (Pty) Ltd with its group of companies formed 30 years ago is highly experienced in the detailing, supply, fabrication and erection of structural steelwork, plate work and piping. They also specialise in the installation of mechanical equipment as well as the supply and installation of electrical apparatus and instrumentation.

Tubular is able to take on a project from foundation level to commissioning and final handover. Tubular Holdings is one of the most respected and well recognised construction companies in South Africa.

In their quest to remain competitive, Tubular has invested R100 million in its workshop in eMalahleni and improved not only its infrastructure but also established systems to increase the efficiency of our working practices.

They have also recently completed the building for paint and blast facilities, an additional workshop and a conveyor fabrication and assembly workshop, thereby creating 75 additional permanent jobs. They are also the proud owners of the biggest crane in Africa – a 1200 ton crawler crane.

Tubular Holdings is one of the few SMEIP (Structural, Mechanical, Electrical, Instrumentation and Piping) contractors in South Africa which is accredited with ISO 9001; 2008, ISO 14001 and OHSAS 18001.

Tubular recognises the importance of a solid in-house training programme. With this in mind, they have developed a training centre and have recruited 51 trainee artisans who will be trained over the next two years.



## VITAL ENGINEERING

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Since 1939 Angus McLeod and Vital Engineering have established a reputation for quality and service in the manufacture of all types of gratings, stair treads, pressed floors and safety handrails. Its brand names of Vitagrid and Maclock have become synonymous with versatility, quality and service.

Vital Engineering's head office is situated in Boksburg, covering an area of 33 000 square metres which also houses a fabrication area. The loading area and overhead crane facilities cover a further 18 000 square metres. This is complemented by sales offices in Cape Town and Durban and a distributor footprint which includes Swaziland, Namibia (Walvis Bay and Windhoek) and Lesotho, and stretches throughout South Africa from Phalaborwa and Rustenburg to East London, Port Elizabeth, Welkom and Kimberley.

The group offers a wealth of product expertise and has been involved in the supply to power plants, petrochemical plants, materials handling projects, mining, process plants, pulp and paper, food and beverage as well as most facets of the civil and structural engineering industries, to both local and international markets.

A variety of products and materials for numerous applications are readily available, when either costs or corrosion are factors. The range includes bitumen dipped, galvanized (610g/m<sup>2</sup>) and mild steel. Other grades of materials such as SS304, SS316, structural grade aluminium and 3CR12 can also be manufactured.

The company's products have been certified to internationally accepted standards and a fully implemented and documented ISO 9001 quality assurance system is in place.



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# THE JUDGES OF STEEL AWARDS 2011

*Each year there is mostly no question or hesitation when it comes to who this Steel Awards judge nominee will be. Strangely enough these guys know what lies in store for them: very early mornings, late nights, long days and often lunch on the run.*

Each year the Institute requests a nominee from six associations and institutes closely related to the steel construction industry to serve on the judging panel for Steel Awards. Each year there is mostly no question or hesitation when it comes to who this nominee will be. Strangely enough these guys know what lies in store for them: very early mornings, late nights, long days and often lunch on the run.

So to all the judges, thank you for your enthusiasm, your dedication, the offering of your precious time and your great sense of humour no matter what.

The judging panel for 2011 comprises:

- Franco Mordini - Association of Steel Tube and Pipe Manufacturers of South Africa (ASTPM)
- Hugh Fraser - South African Institute of Architects (SAIA)
- Johann Nel - South African Iron and Steel Institute (SAISI)
- John Truter - Consulting Engineers South Africa (CESA)
- Neil Penson - Constructional Engineering Association (CEA)
- Peter Curr - Association of Steel Tube and Pipe Manufacturers of South Africa (ASTPM)
- Steve Mackie - Joint Structural Division (JSD) of the South African Institution of Civil Engineering (SAICE)
- Spencer Erling - Convener of the judges for SAISC
- Reneé Pretorius - Convener of the judges for SAISC

Left: Franco Mordini  
Middle: Hugh Fraser  
Right: Johann Nel



Left: John Truter  
Middle: Neil Penson  
Right: Peter Curr

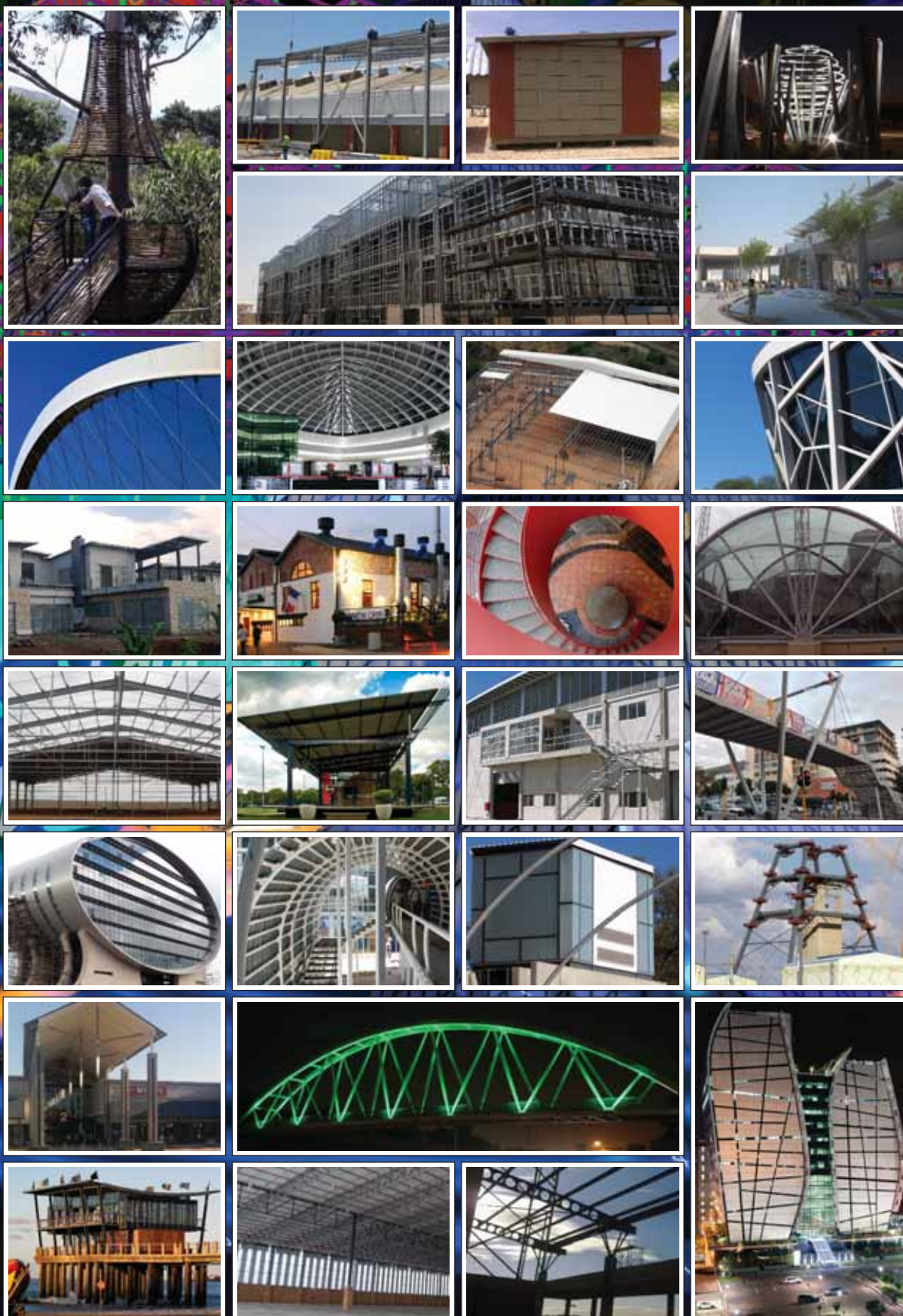


Left: Steve Mackie  
Middle: Spencer Erling  
Right: Reneé Pretorius





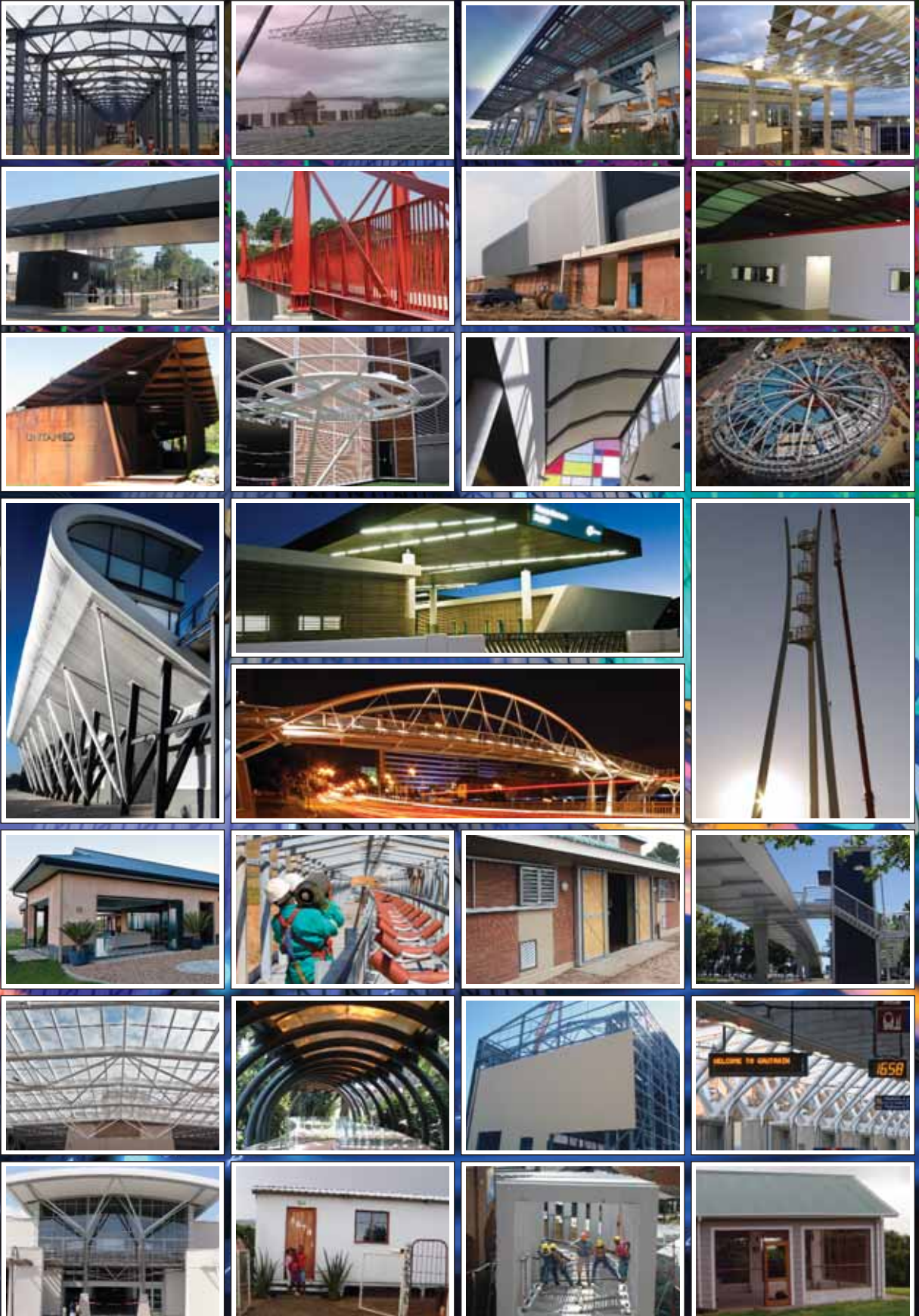
# 2011 saisc steel awards winner





Entries

## 2011 saisc steel awards winner





Category nominations

## architectural







# WINNER: ARCHITECTURAL MOSES MABHIDA STATION

*By day, sunlight enlivens the juxtaposition of the materials and steel structure, creating diffused woven shadows along the concourse. At night the station transforms into a glowing woven lantern.*



The Moses Mabhida Station was commissioned by the Passenger Rail Agency of South Africa (PRASA) and Metrorail, as a World Cup 2010 project. It is located adjacent to Durban's newly constructed Moses Mabhida Stadium.

The station design sets a new standard in transport architecture and brings dignity to South Africa's neglected public transport network.

## DESIGN PURPOSE

The design of station integrates and balances architectural vision, civic identity and urban context with the rigorous requirements of passenger flows and operational demands.

Its configuration is based on a simple, pragmatic two-level arrangement. Passengers and pedestrians approach the station from Isaiah Ntshangase Road. The main concourse accommodates the visitor reception, ticket office, turnstiles, security and public facilities. Access from the concourse to the platforms at lower level, is via stairs and lifts located in vertical circulation spines.





## ARCHITECTURAL LANGUAGE

In developing their proposal, the design team undertook extensive research into Durban's industrial and cultural context and found a rich palette of colours, textures and materials which influenced the language of the overall design.

The contemporary architectural language merges the vocabulary of craft and tradition with the scale and energy that defines the confidence and aspirations of the new South Africa. The reference to craft is expressed in the way the various architectural forms and structure are 'woven' together to form the station's overall multi-layered, logical composition.

## USE OF STEEL

The objective was to select a simple material and texture palette which responded to the principles of the architectural language while being robust and durable enough to satisfy the client's demanding operational requirements.

The unusual setting out of the steel structure along the concourse was generated by the location and geometry of the rail platforms and folded planes resulting in a 'woven' structure, evocative of the basket weaving skills of KwaZulu-Natal craft culture. This creates a composition that combines a unique spatial dynamic with diverse visual perspectives.

The use of weathering (Corten) steel defines the unique and aesthetically striking character of the building, and resonates with Durban's marine and industrial character. The layering of weathering steel as the outer skin enclosing the structure creates a visual tension with the soft greys of the concrete base. The timber slatted screens create rhythmic texture and natural warmth. The character of the building will evolve with time as the steel surfaces gradually develop a red-brown patina that reflect the hues and tones of the maritime environment.

By day, sunlight enlivens the juxtaposition of the materials and steel structure, creating diffused woven shadows along the concourse. At night the station transforms into a glowing woven lantern.

## CHALLENGES

The programme was tight with an immovable completion date - this meant day and night shift working.

## project team

Developer/Owner:

PRASA

Architect:

ARUP

Structural Engineer:

Iliso Consulting

Quantity Surveyor:

LDM Consulting

Project Manager:

Arcus Gibb

Main Contractor:

Grinaker-LTA Building East

Steelwork Contractor:

Impact Engineering Durban

Corten Steel Cladding and Roofing,  
Balustrades, Handrails and Gate:

Rebcon Engineering, MJ Cheater



Train services remained operational through-out construction albeit limited to one set of tracks at a time.

### JUDGE'S COMMENT

by Hugh Fraser representing the South African Institute of Architects

The sheer magnitude of the adjoining stadium would dwarf any adjoining structure. However, the station serving the stadium is more accessible on a daily basis to the general population and offers an opportunity to experience a building that delights on a number of levels.

It has been many years since a train related building has inspired in South Africa, but this building achieves this through its innovative design. On immediate observation, the structure appears almost haunched, ready for motion. The exploitation of steel as a material is achieved in a number of interpretations. By using Corten as integument (protective covering ed.), the structure has been exposed as aesthetic screens and and the dynamic sloping of the walls implies movement. All combine to create a building that when viewed with other materials, provides lines that are clean and a public facility that stimulates the grind of daily commuter travel.

The station hovers above the steel structures that define rail travel and elements are interpreted into the building, like a knuckle that punctuates the language of rail travel.





## COMMENTS FROM SOME MEMBERS OF THE PROJECT TEAM

*Elaine Lamb, senior architect/project leader - Stages 3/4-6 and Ray Harli, architect - Stages 3/4-6, Arup*

The design team undertook extensive research into Durban's industrial and cultural context and found a rich palette of colours, textures and materials which informed the language of the overall design.

The contemporary architectural language merges the vocabulary of craft and tradition with the scale and energy of Durban's marine industry. Spatial lines generated from the location and geometry of the platforms are carried through and inform the setting-out of the steel structure, the configuration of the floor patterns and the lighting lines on the main canopy. Achieving these ideas was challenging and was only made possible through collaboration between all parties involved.



Elaine Lamb.



Ray Harli.



Samad Khalpey.

*Samad Khalpey, project structural engineer, ILISO Consulting Engineers*

Whenever time is limited and materials being used are different from the usual, there will be challenges. The architect wanted to use Corten steel to achieve the rustic appearance of a shipyard. We had to convince the client that this material would last a 'lifetime', particularly on the coast. The main skeletal structural steel frame also posed challenges, particularly with regards to alignment and angular orientation of beams and columns. Attention to detail was also very important to ensure a quality product in a short time period to be operational before the World Cup 2010.

Congratulations to the whole team of consultants and contractors for a job well done!



# COMMENDATION: ARCHITECTURAL LEBONE COLLEGE II

*To represent the community it serves, the African principles of craft production were held paramount by the design team. The choice was made to transmute traditional weaving crafts with steel technology.*



## THE PROJECT

Lebone College II, situated in North-West Province, is the creation of the Bafokeng King, Kgosi Leruo Molotlegi, and is thus an important part of the Royal Bafokeng Nation. As an independent school of excellence, it has a pivotal role to play in both raising the level of education as well as serving the community. The new school campus comprises of classrooms, administration-civic buildings and accommodation for staff and students.

The concept premise is that, at school, a person learns how to be a social being in the world.

The school design was based on a village-city design, with all the elements that formalise a human settlement, from the civic scale types to the smallest living units for staff and students.

## REASON FOR STEEL

The use of steel allowed for the structures to be light weight and efficient but also creating a fresh approach; one with a different technical capacity



than its origin elements, one with a presence and magnificence much higher than the sum of its components.

A recurring theme in the African vernacular production (weaving, crafts, structures) is to assemble an element from smaller pieces that one person can carry, the whole being assembled solely through man-power.

Throughout, the manufacture and erection was facilitated by precision laser-cutting processes which gave the accuracy for fixing and bolting necessary in these types of architectural elements; no welding was used anywhere.

## CHALLENGES AND SOLUTIONS

To represent the community it serves, the African principles of craft production were held paramount by the design team. The choice was made to transmute traditional weaving crafts with steel technology.

The challenge was thus in the elements and the connections: how could these joints be expressed in order to make each individual element stand proud but also appear as part of a cohesive whole? The solution was three different applications in steel: a tensile canopy over the main assembly area; two types of steel solar screens, one static and the other in motion and a set of tree-like columns.



## STEEL ELEMENTS

### The tensile canopy

The structure was designed in two ways:

- (i) With the minimum necessary weight of steel to effect the creation of a catenary membrane;
- (ii) To be assembled with a technique similar to traditional weaving-craft techniques (without welding).

The assemblage out of different grades of steel will make the skin weather distinctively and highlight the pattern of its weaving elements. The tensile canopy combines the roles of structure and skin by engineering triangular steel panels and round aluminium connectors that are linked together to form a structural blanket where each individual part plays a pivotal role to keep the canopy in the air.

### The mechanical louvre screens

The steel members were designed to resemble a loosely woven grass matt – the unique quality being that they look completely different when open or closed. When closed they resemble basket weave; when open they appear like a very loosely woven grass and fibre cloth that lets in all the light and the magnificent and desirable view.

### The fixed louvre screens

Again using a traditional weaving technique, a highly sophisticated cladding facade clay tile was used as blades, and hung on to a galvanized steel structure.





This screen was designed to its particular contextual demands, that is to offer high thermal absorption whilst allowing permanent convection ventilation.

#### The tree-like columns

The tree-like columns exemplifies the advantage of minimal material for maximum strength.

In a local and global context of reducing waste and being aware of available resources at hand, these principles employed by the design team, and inspired by the vernacular architecture, have allowed for an efficient use of materials without compromising the awe-inspiring nature of this campus for future generations.

#### JUDGES' COMMENT

In sympathy with the excellent education offered, it is not surprising that excellence in the use of steel is visible throughout the extensive campus.



Taking centre court is the tensile canopy. Designed without welded connections the structure transmutes traditional weaving crafts with steel technology. Exposed steelwork is to be seen all over in different applications.

All in all a wonderland of excellent steel structural forms truly deserving in a commendation for excellent use of steel in the architectural category.

## project team

#### Developer/Owner:

Royal Bafokeng Administration

#### Architects:

Activate Architecture & Afritects Architects  
– in Association

#### Structural Engineers:

WSP & Asakheni – in Association

#### Quantity Surveyors:

De Leeuw Group & MMQS – in Association

#### Project Managers:

Bigen Africa + Pro Arnan - in Association

#### Main Contractors:

JST Construction cc  
Stefanuti Stocks (Pty) Ltd

#### Steelwork Contractor/s:

Lewis Levin Architect (tensile structure & screens), Central Welding Works (tree-column & general steelwork), Mosaic Communications & Projects cc (tree-column & general steelwork)

#### Design of Tensile Structure & Screens:

Lewis Levin Architect

## Laerskool Pretoria-Oos Tennis Clubhouse

Architectural category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

School Board of Laerskool Pretoria-Oos

Architect:

Mathews & Associates Architects cc

Structural Engineer:

P-Design cc

Main Contractor:

One Peter 2 Construction cc

Steelwork Contractor:

Secure-o-line



## Moyo on the Pier

Architectural category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

uShaka Marine World

Architect:

Koop in association with ZAI

Structural Engineer:

Arup (Pty) Ltd

Quantity Surveyor:

MRQS

Project Manager:

Profica

Main Contractor:

Reed Simpson Construction

Steelwork Contractor:

Ramwal Engineering



## Turbine Hotel and Spa

Architectural category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Turbine on Thesen (Pty) Ltd

Architect:

CMAI Architects

Structural Engineer:

Nieuwoudt & Co.

Quantity Surveyors:

McIntosh Consulting & Steele Consulting

Main Contractor:

Cape Island Construction

Steelwork Contractor/s:

Van Brakel Engineering

Illegal Design

Refurbishment of existing equipment:

TI Paint & Maintenance



## The Treehouse

Architectural category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Crossways Farm Village Development Company

Architect:

CMAI Architects

Structural Engineer:

Poise Consulting Engineers

Main Contractor:

Illegal Design

Steelwork Contractor:

Illegal Design





## Alice Lane

Architectural category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**

Zenprop Property Holdings (Pty) Ltd  
Tiber projects (Pty) Ltd

**Architect:**

Paragon Architects

**Structural Engineer:**

Sotiralis Consulting Engineers (Pty) Ltd

**Quantity Surveyor:**

Schoombie Hartmann (Pty) Ltd

**Project Manager:**

Capex Projects (Pty) Ltd

**Main Contractor:**

Tiber Bonvec Construction (Pty) Ltd

**Steelwork Contractor/s:**

Ferro Eleganza (Pty) Ltd  
OmniStruct Nkosi (Pty) Ltd



## Untamed

Architectural category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Dylan Lewis

Architect:

Enrico Daffonchio – Daffonchio and Associates

Structural Engineer:

Tielman Niewoudt – TN Consulting

Project Manager:

Andi Norton

Main Contractor:

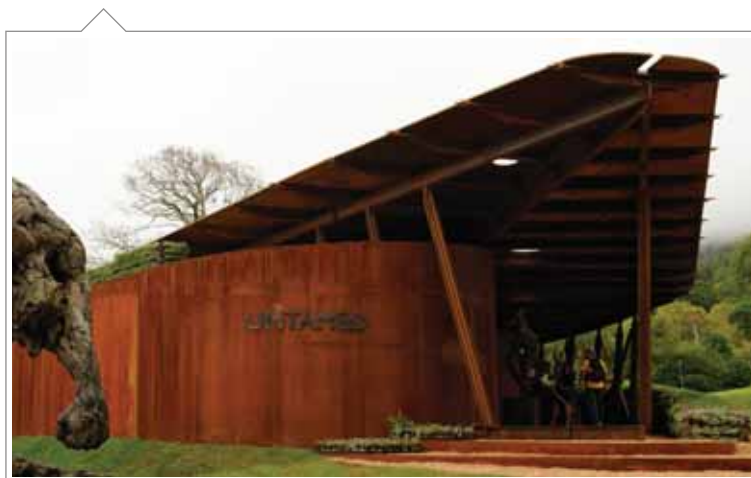
Roy George

Steelwork Contractor:

Olympic Steel

Kirstenbosch Gardens Consultant:

Horticulturalist: Anthony Hitchcock



## Waterkloof Corner

Architectural category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Retail Africa

Architect:

VHS Architects (Pty) Ltd

Structural Engineer:

Dekker &amp; Gelderblom Consulting Engineers (Pty) Ltd

Quantity Surveyor:

Storm Sciocattie Surveyors (Pty) Ltd

Project Manager:

MDSA Project &amp; Construction Management (Pty) Ltd

Main Contractor:

Mbale Projects (Pty) Ltd

Steelwork Contractor:

Central Welding Works (Pty) Ltd





## MCB Ebene for Mauritius Commercial Bank

Architectural category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**

The Mauritius Commercial Bank Ltd

**Architect:**

Jean Francois Koenig Architects

**Structural Engineers:**

Arup (Pty) Ltd and ArupSIGMA Ltd

**Quantity Surveyor:**

Hooloomann and Associates Ltd

**Project Manager:**

ArupSIGMA Ltd

**Main Contractor:**

General Construction Company Ltd

**Steelwork Contractor:**

Cadcon (Pty) Ltd



## Pick n' Pay Retail Centre

Architectural category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**

Pick n' Pay Stores Ltd

**Architect:**

Bentel Associates International (Pty) Ltd

**Structural Engineer:**

Arup (Pty) Ltd

**Quantity Surveyor:**

Quanticost cc

**Project Manager:**

Abland (Pty) Ltd

**Main Contractor:**

Stabilid Construction (Pty) Ltd

**Steelwork Contractor:**

Central Welding Works (Pty) Ltd





## Alzu Petroport

Architectural category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**

Alzu Enterprises (Pty Ltd)

**Architect:**

Boogertman & Partners

**Structural Engineer:**

Egmont Furstenburg Consulting Engineers

**Quantity Surveyor:**

Taljaard Meyer Storm Inc. Registered  
Quantity Surveyors

**Project Manager:**

I.C.E Project Managers

**Main Contractor:**

Boogertman Smit Building Pty (Ltd)

**Steelwork Contractor:**

Spiral Engineering



## Levy Business Park, Lusaka, Zambia

Architectural category nomination

### PROJECT TEAM

**Developer/Owner:**

Liberty Property Developers

**Architect:**

Bentel Associates International (Pty) Ltd

**Structural Engineer:**

HBS Africa Consulting Engineers

**Quantity Surveyors:**

Davis Langdon/Nonku Ntshona/MLN  
Associates JV

**Project Managers:**

GHC/Focus/Minerva JV

**Main Contractors:**

Group Five/Zcon JV

**Steelwork Contractor/s:**

Impact Engineering cc





## Philippi Soccer Stadium

Architectural category nomination

### PROJECT TEAM

**Developer/Owner:**

Provincial Government Western Cape

**Architect:**

Design Scape Architects

**Structural Engineer:**

Lukhozi Consulting Engineers (Pty) Ltd

**Quantity Surveyor:**

LDM

**Project Manager:**

Provincial Government Western Cape

**Main Contractors:**

WBHO/PHC

**Steelwork Contractor:**

KOST Engineering

**Electrical:**

4EM Electrical Engineers



## St John's College – Spiral Stair

Architectural category nomination

### PROJECT TEAM

**Developer/Owner:**

St Johns College

**Architect:**

TC Design Architects

**Structural Engineer:**

Richie Midgley Consulting Engineers (Pty) Ltd

**Quantity Surveyor:**

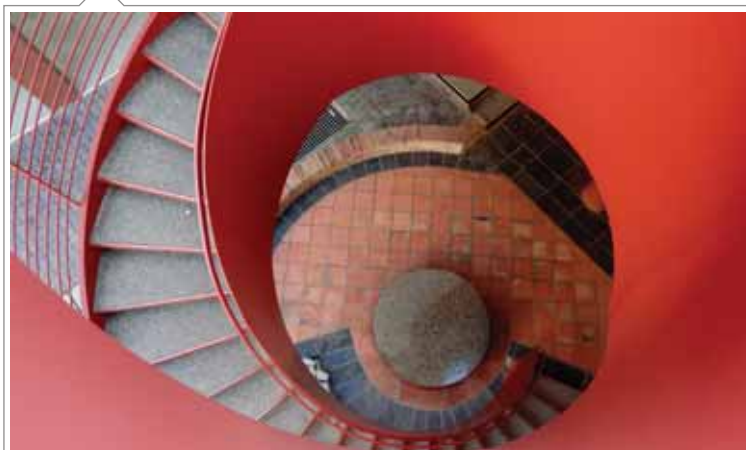
Schoombie Hartmann Quantity Surveyors

**Main Contractor:**

Barrow Construction

**Steelwork Contractor:**

Spiral Engineering



## Phuthaditjhaba Stable Block for SAPS

Architectural category nomination

### PROJECT TEAM

Developer/Owner:

NDPW

Architect:

MNI Architects and Project Managers

Structural Engineer:

MOM Consulting Engineers

Quantity Surveyor:

Tau Projects

Project Manager:

Departmental Project Manager

Main Contractor:

Quthing Construction

Steelwork Contractors:

Quthing Construction

Pierre Linde Construction







## Walker Creek entrance canopies

Architectural category nomination

### PROJECT TEAM

**Developer/Owner:**  
CJ Irons Property Developers

**Architect:**  
Boogertmann and Partners

**Structural Engineer:**  
Sotiralis Consulting

**Quantity Surveyor:**  
GK Projects

**Main Contractor:**  
CJ Irons Construction

**Steelwork Contractor:**  
Ferro Eleganza



## Pretoria Government Building Rehabilitation

Architectural category nomination

### PROJECT TEAM

**Developer/Owner:**  
Department of Public Works

**Architect:**  
MEG

**Structural Engineer:**  
Trowbridge Higson-Smith & Associates

**Quantity Surveyor:**  
Mahlati Liebertrau

**Project Manager:**  
Department of Public Works

**Main Contractor:**  
GVK-Siya Zama Building Contractors  
(Gauteng) (Pty) Ltd

**Steelwork Contractor:**  
Tass Engineering (Pty) Ltd

**Detailers/Detailing Company:**  
3D Struct

**Erector:**  
Relsh Steel (Pty) Ltd



## Parys Project

Architectural category nomination

### PROJECT TEAM

Developer/Owner:  
Free State Province

Architect:  
Urban edge

Structural Engineer:  
C. F Joubert

Project Manager:  
Sassi

Main Contractor:  
Sassi

Steelwork Contractor:  
Sassi



## Engineering III Building and Parkade at the University of Pretoria

Architectural category nomination

### PROJECT TEAM

Developer/Owner:  
University of Pretoria

Architect:  
ARC Architects

Structural Engineer:  
Aurecon

Quantity Surveyors:  
Pentad QS & Davis Langdon

Project Manager:  
ARC Architects

Main Contractor:  
Stefanutti Stocks Building Gauteng

Steelwork Contractor:  
Nancy Engineering



## Brits Mall

Architectural category nomination

### PROJECT TEAM

**Developer/Owner:**

Resilient Properties (Pty) Ltd

**Architect:**

Franzen Architects cc

**Structural Engineer:**

ARQ Consulting Engineers (Pty) Ltd

**Quantity Surveyor:**

GK Projects (Pty) Ltd

**Project Manager:**

Stabilid Construction (Pty) Ltd

**Main Contractor:**

Stabilid Construction (Pty) Ltd

**Steelwork Contractor:**

Ferro Eleganza





Category nominations

# bridges







# WINNER: BRIDGE

## BUITENGRAGT BRIDGE

*"This project probably aged me twenty years. It posed so many challenges. This was the first box steel section work we ever attempted and it proved to be much more difficult than any of us could have imagined. The pending World Cup just added to everyone's already high stress levels. The fact that we managed to complete this project in time and to a very high quality, was only due to a magnificent team effort. We are proud to be part of what I believe to be a new icon of this beautiful city."*

(Mark Fredericks, Vusela Construction)



The Buitengragt pedestrian bridge sets itself apart as a unique structural steel bridge that is sculpted from its circumstances. From the technical challenges of the site, the project team created a unique but simple aesthetic that blends into the busy urban backdrop of Cape Town city centre.

This bridge came about with Cape Town's preparation for World Cup 2010. Historically pedestrians have had to cross the five-lane road through an almost continuous flow of traffic. To accommodate the increase in pedestrians during the World Cup, a bridge was required. Today the bridge is a positive legacy that has greatly improved the pedestrian linkages in the city.

The structure's position presented a number of challenges to the design team. Partly founded on top of a buried parking garage and partly on land reclaimed from the sea, the foundation design required some innovative ideas. Integrating the bridge into a narrow corridor between two of the city's main hotels also influenced the design outcome. In particular the need to limit the noise impact became an unavoidable constraint.



A structural steel asymmetric box girder was not an obvious choice of structural form. It did, however, offer a number of specific benefits. The use of structural steel significantly reduced the dead weight of the bridge, which had to be 4 metres wide. This was important considering the founding conditions. Because it was necessary for pedestrians to access the structure along its length, a closed box section with an up-stand beam on one side was developed. The lift shafts (provided for disabled access) and additional access staircases were then able to connect directly onto the open side of the bridge deck.

## SOME DESIGN CONSIDERATIONS

Resting on the roof of a buried parking garage, the foundations for the first two spans of the bridge are unique. The structural steel piers are connected to large hollow concrete boxes that displace the existing fill material. The use of a structural steel deck section meant that no additional loading was applied to the existing roof structure.

The localised deformation of an asymmetrically supported bridge can disturb pedestrians, even though it may be structurally irrelevant. The preliminary deck design took its direction from a sensitivity analysis of the structure's serviceability performance.

In deciding upon the fixity of the bridge, different ways of providing the necessary transverse rotational restraint to the box girder were reviewed. A built-in pier was preferred because of the simplicity of the connection detail.

## FABRICATION AND CONSTRUCTION

The main challenge in fabricating a closed torsion box is the assembly and welding sequence and ensuring that all the required welds can be accessed. The presence of internal longitudinal webs introduced the need for access windows at the diaphragms.

The completed steel box sections were fabricated in 6-metre long sections then painted and transported to site. The on-site welding was a technical challenge as it included overhead welding. Specialist welding sub-contractors were employed to provide the necessary expertise. The commitment and skill of the on-site team was the critical factor that made the project a success.

Building a bridge next to the city's two busiest hotels also meant that all construction activities had to be continually monitored to reduce dust and noise pollution. Choosing a prefabricated structural steel structure greatly assisted in minimising the impact of the construction.





The bridge was constructed on budget and completed in time before the start of World Cup 2010.

### JUDGES' COMMENT

Whilst it appears to be a simple straight arched bridge do not let this fool you. Technically speaking this is excellence in the use of steel of the highest order.

It is a unique structural steel bridge whose form was forced upon it by all sorts of constraints.

The bridge is described by the designers as being the most successful bridge they have built if pedestrian usage is the basis of assessment.



Mark Fredericks.



Alton Ruiters.



Dudley Ford.

An exceptional bridge truly deserving of a category award.

### COMMENTS FROM SOME MEMBERS OF THE PROJECT TEAM

*Mark Fredericks, Vusela Construction (Main Contractor)*

"This project probably aged me twenty years. It posed so many challenges. This was the first box steel section work we ever attempted and it proved to be much more difficult than any of us could have imagined. The pending World Cup just added to everyone's already high stress levels. The fact that we managed to complete this project in time and to a very high quality, was only due to a magnificent team effort with the engineers (Vela VKE) and us. We are proud to be part of what I believe to be a new icon of this beautiful city."

*Alton Ruiters, resident engineer, Vela VKE Consulting Engineers*

"As the deadline approached and the progress of the work intensified, it was quite challenging for me to co-ordinate and oversee the activities of all the specialist sub-contractors. The project gave me my first exposure to a variety of aspects, such as CCTV and lift car installations. I am proud to have made a contribution to the success of this project."

*Dudley Ford, welding sub-contractor, SA Five Engineering*

"We were privileged to be part of an innovative team involved in construction of the Buitengragt bridge. Fabricating a complex and unique design with weather and time constraints were our largest challenges to overcome on this project."

## project team

**Developer/Owner:**

City of Cape Town

**Architect:**

GAPP Architects and Urban designers

**Structural Engineer and Project Manager:**

Vela VKE Consulting Engineers (Pty) Ltd

**Main Contractor:**

Vusela Construction (Pty) Ltd

**Steelwork Contractor:**

ADM Engineering (Pty) Ltd

**Welding sub-contractor:**

SA Five Engineering



## Zwelitsha pedestrian bridge

Bridge category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Buffalo City Municipality

Structural Engineer:

Vela VKE Consulting Engineers (Pty) Ltd

Project Manager:

Vela VKE Consulting Engineers (Pty) Ltd

Main Contractor:

Roberts Bros Construction (Pty) Ltd

Steelwork Contractor:

ISG Engineering



## Markgraaff Pedestrian Bridge

Bridge category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Mangaung Local Municipality

Architect:

GAPP Architects and Urban designers

Structural Engineer:

Vela VKE Consulting Engineers (Pty) Ltd

Project Manager:

Vela VKE Consulting Engineers (Pty) Ltd

Main Contractor:

HSH Construction NC & FS (Pty) Ltd

Steelwork Contractor:

GEAR Steel (Pty) Ltd



## Waterkant Pedestrian Bridge

Bridge category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

City of Cape Town

Architects:

GAPP Architects and Urban designers

COA Architects

Structural Engineer:

Vela VKE Consulting Engineers (Pty) Ltd

Project Manager:

Vela VKE Consulting Engineers (Pty) Ltd

Main Contractor:

Civils2000 (Pty) Ltd

Steelwork Contractor:

Union Steel



## Lynwood Glen Pedestrian and Pipe Bridge

Bridge category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

South African National Roads Agency Limited (SANRAL)

Architects:

SANRAL and ARQ together with input from Professor Glen Mills

Structural Engineer:

ARQ Consulting Engineers

Main Contractor:

BRCD (Basil Read, Roadcrete, Chavani and DipCivils)

Steelwork Contractor:

Cadcon (Pty) Ltd

Lowcoat-Surface preparation and Primer coats:

Dram Industrial Painters Contractor – Intermediate and Top coats





## Crystal Towers Bridge

Bridge category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:  
Rabie Property Group

Architect:  
Vivid Architects

Structural Engineer:  
Sutherland

Quantity Surveyor:  
B&L Quantity Surveyor

Main Contractor:  
Konti Steel

Steelwork Contractor:  
Konti Steel



## Mangaung intermodal bridge, Hangar Street

Bridge category nomination

### PROJECT TEAM

Developer/Owner:  
Mangaung local municipality

Architect:  
Incline Architects

Structural Engineer:  
Vela VKE Consulting Engineers (Pty) Ltd

Quantity Surveyors:  
Limco QS  
Rubiquant

Project Managers:  
Vela VKE Consulting Engineers (Pty) Ltd  
Incline

Main Contractor:  
RSI Intermodal Construction

Steelwork Contractor:  
OmniStruct Nkosi (Pty) Ltd



Category nominations

## light steel frame building







# WINNER: LIGHT STEEL FRAME BUILDING

## 2011 ALL AFRICA GAMES – ATHLETES' VILLAGE

Award sponsored by Stewarts & Lloyds

*Whoosh! Now you don't see it, now you do! This is mid-rise building in top gear. The Athletes' Village project exemplifies a number of the advantages of light steel frame building forming the driving force that enabled the project to meet incredibly tight project deadlines and produce a high-quality end product.*



In April of 2009, Mozambique took over hosting duties of the 10th All Africa Games from Zambia, who pulled out due to the global financial crisis. While hosts typically have four years for planning and implementing such events, Mozambique only had two short years as the Games dates were set for 3 to 18 September 2011. In addition to the construction of sports facilities and infrastructure development, one of the primary initiatives was the Athletes' Village Project, which will provide lodging for the participants.

The Athletes' Village Project is on the main premises of the Games. The main stadium and facilities are located in Zimpeto, a suburb of Maputo the capital city of Mozambique. The purpose of the project is to house the majority of the 6 500 athletes from 48 African countries who will be competing in the Games. Upon conclusion of the Games, the buildings will be converted to resident housing for the people of Zimpeto. The Athletes' Village consists of 27 apartment buildings, each four stories high with a total of 848 apartments. The total living space is over 97 000 square meters.

The biggest challenge of this project was the extremely tight time frame to complete the 27 structures. In response, the general contractor, a consortium







## project team

### Developer/Owner:

COJA\_ Comissão Organizadora dos X Jogos Africanos

### Architect:

Mota-Engil, Engenharia e Construção, SA

### Structural Engineer:

Worthington Construction Group

### Quantity Surveyor:

Mota-Engil, Engenharia e Construção, SA

### Project Manager:

Michael Whitticar of Worthington Construction Group

### Main Contractor:

Consortium between Mota-Engil / Soares da Costa

### Steelwork Contractor/s:

Worthington Construction Group, Cosira Group, Mema Metalúrgica da Matola

### Cold Form Steel Supplier:

Vela Steel Building Systems and Worthington Construction Group

### Lining and Insulation Supplier:

Saint-Gobain Construction Products (Pty) Ltd

of Mota-Engil and Soares da Costa, chose Worthington Construction Group's light steel framing system.

Light steel framing was chosen as the structural system on this project for a multitude of reasons. By utilising load bearing LFS members (wall studs and floor joists) this project was able to take advantage of steel's greater strength-to-weight ratio versus traditional methods of construction such as poured-in-place concrete. This framing system incorporates innovative time efficiency, resources, and engineering to produce a quality structure on a grand scheme.

The floor framing system is ledger framed rather than traditional platform framed. This eliminates fire-blocking requirements, greatly improves time installing floor to floor shear connections and reduces wall layout time for the floor above.

Each floor is sheathed with a galvanized metal deck, allowing MEP trades to install of their work before the self leveling floor underlayment (3500 psi) is poured. This unique floor underlayment is half the weight of structural concrete, thus reducing floor system dead loads and allows for a lighter foundation.

## THE CLIENT HAS THE LAST SAY...

"From the consortium's point of view, we regard this new technology, namely LFS, as one of the best options for this kind of ambitious project in matters of, time, dimension and localisation. With this state-of-the-art technology we are able to respect and improve some social and environmental issues, namely:

- Reduction of job site noise, trash and scrap levels
- The buildings are designed to withstand seismic forces
- The application of more sustainable material like steel (green building), instead of wood or concrete and a reduction of CO<sub>2</sub> emissions in the construction process
- Reduction of the foundation requirements and earth work
- Increase in living comfort using more thermal and acoustical insulation



Michael Whitticar.



Jose de Almeida.



David van Zyl.

In this project, we were able to use local materials (South Africa's) and local manpower, always thinking in how we can help local people increase their skills and their quality of life."

Advantages in speed, efficiency, strength and innovation are the driving forces that enabled the Athletes' Village Project to meet project deadlines and produce a high-quality end product.

## JUDGES' COMMENT

Whoosh! Now you don't see it, now you do! This is mid-rise building in top gear. The Athletes' Village project exemplifies a number of the advantages of light steel frame building forming the driving force that enabled the project to

meet incredibly tight project deadlines and produce a high-quality end product.

Firstly, the design and planning – their philosophy of standardisation certainly paid off. Secondly, the execution of the building process also illustrated the skill and experience of the team.

But the most spectacular feat was the speed with which the project was completed – 848 three bedroomed apartments in 27 four storey blocks were completed in a little more than 7 months! Do the math – that is one 4-storey block of apartments every 8 days. This truly remarkable speed of construction could not possibly have been achieved with conventional concrete and masonry building.

Regardless of the outcome of the Games, Worthington and light steel frame building are the winners!

## COMMENTS FROM SOME MEMBERS OF THE PROJECT TEAM

*Michael Whitticar, Worthington Construction*

"Worthington Construction Group offered a light steel framing solution to meet the tight schedule of the 2011 All-African Olympic Athletes' Village.

Panel production commenced and 130 days later, 19 842 panels were produced. With the strength, speed, efficiency, and innovation our system provides, it took just 125 days to erect 27 buildings; a total of 98 477.22 square metres."

*Jose de Almeida, Mota Engil*

"I remember that initially everyone was a little skeptic about this project because of the new technology (LSF), and the short time we had before the All Africa Games. But as Mota-Engil always believed, "yes, it is possible!" This project is a good example of hard work and resilience and will be the first step to demonstrate the big potential of this technology in Africa and the new way to build our future homes."

*David van Zyl, Operations Director, Vela SBS*

"This project has set a major milestone in light weight steel building in Southern Africa. The incredibly short construction time demonstrated the ability of light weight steel technology to meet the needs of large scale residential projects."

## 2010 International Broadcast Centre

Light steel frame building category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**

HBS 2010 Limited (Incorporated in Switzerland)

**Architect:**

+27 Architects

**Structural Engineer:**

HAGE Projects (Pty) Ltd

**Project Manager:**

HBS 2010 Limited

**Main Contractor:**

Various sub-contractors were employed and managed By Kwikspace



## Bela Vista, Mozambique

Light steel frame building category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**

Bela Vista Rice

**Architect:**

Magnaclad

**Structural Engineer:**

Magnaclad

**Quantity Surveyor:**

Magnaclad

**Project Manager:**

Moya Homes Mozambique (c/o Magnaclad)

**Main Contractor:**

Moya Homes Mozambique (c/o Magnaclad)







## House Raubenheimer, Bela Bela

Light steel frame building category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

SA Steelframe Systems cc

Architect:

Recreate Architecture

Structural Engineer:

Jaco Richter

Project Manager:

Raubenheimer

Main Contractor:

SA Steelframe Systems cc

Steelwork Contractor/s:

SA Steelframe Systems cc

Razorbill Properties 127 (Pty) Ltd

Stone Cladding:

Inca Stone Veneers



## House Kahler

Light steel frame building category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Bjorn Kahler

Architect:

Virtual Architects

Structural Engineer:

Design Desk

Project Manager:

Shospec (Pty) Ltd

Main Contractor:

Shospec (Pty) Ltd

Steelwork Contractor:

Shospec (Pty) Ltd



## Novo Packhouse

Light steel frame building category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**

Colors Packhouse (Pty) Ltd

**Architect:**

Johan Wessels Architect

**Structural Engineer:**

Element Consulting (Pty) Ltd

**Quantity Surveyor:**

Senekal Allen & Partners

**Project Manager:**

GEA Project Solutions

**Main Contractor:**

Murray & Roberts Construction Western Cape

**Steelwork Contractor:**

Light Frame Homes cc



## KwaNobuhle Shopping Centre

Light steel frame building category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**  
Lamprecht Properties

**Architect:**  
Lamprecht Properties

**Structural Engineer:**  
WSP SA Civil & Structural Engineers

**Quantity Surveyor:**  
Lamprecht Properties

**Project Manager:**  
Lamprecht Properties

**Main Contractor:**  
Lamprecht Properties

**Steelwork Contractor:**  
USM Building Supplies

**Light Steel Frame Roof Suppliers:**  
Mitek Industries



## Glenwood House Private School

Light steel frame building category nomination

Shortlisted

### PROJECT TEAM

**Developer/Owner:**  
Glenwood House Private School

**Project Manager:**  
SA Steelframe Systems cc

**Main Contractor:**  
SA Steelframe Systems cc

**Steelwork Contractor:**  
SA Steelframe Systems





Category nominations

# mining and industrial







# WINNER: MINING AND INDUSTRIAL

## NEW 'A-FRAME' HEADGEAR FOR GOLD FIELDS SOUTH DEEP TWIN SHAFTS VENT SHAFT



*In case you are still not convinced, this is where the excellence in the fabrication comes to light. All the NDT testing of the welds passed with flying colours, distortion even with all that welding is minimal, there are 5 000 torqued bolts and they all fitted!*

I can almost feel some of you groaning "What, another headgear taking a category award, Again! What on earth do you guys find in headgears that keep you awarding category winners to these headgears again and again?" You are absolutely correct in reminding us that this is the third headgear category award winner in the last five years.

But the simple answer is: these projects all just radiate excellence in the use of structural steel. In answer to your next unexpressed question i.e. what makes this headgear special or different from the previous two?

This is just a great story for steel. Just imagine the circumstances where in 2006 the new owners (Gold Fields) of the mine are keen to ramp up its production capacity.



The options are:

Build a new complex of shafts (which could happen in the future but the lead time of about a decade is just too long).

*Or*

Deepen the existing ventilation shaft, already some 2.76 kilometres deep, increase its load carrying capacity by modifying the shaft from mainly a ventilation shaft into part ventilation, part rock hoisting. This would only be a 3 or 4 year project!

The latter 'quick fix' solution was chosen.

## CHALLENGES

As with all unusual projects, only once one goes into the detail the challenges become apparent:

- The foundation design of existing concrete headgear could not cope with the increased loads expected from the installation of a large duplicate BMR Rock Winder as installed on the main shaft.
- A brattice wall had to be installed to separate the rock hoisting and the upcast mine ventilation.

A new larger headgear becomes the only option, but how do you keep the existing shaft equipping in operation and build a new headgear?

## THE SOLUTION

The answer lies in a new steel headgear! Build it around the existing concrete headgear, while keeping it in operation till the new installation is virtually ready and then make the changeover.

Erecting a 1 900 ton steel framed headgear around a working shaft was not an option. However with steel fabrication done well in advance of the installation programme; with great planning down to the last sub-assembly and lift; with a fleet of Sarens cranes including a 1 000 ton capacity crawler crane (for the really big lifts) in place; with just a few scheduled periods for the shaft (over Christmas and Easter) – yes, it is possible to build a complete 1 900 ton structure in just 28 days.

## THE STRUCTURE

The main framework consists of hollow section structural boxes welded up from plates typically 45mm thick. The plates are welded together with complete joint penetration welds. Each 10 metre section needs 2 kilometres of preheated submerged arc welding runs. Just imagine the total welding run distance on the job!





In case you are still not convinced, this is where the excellence in the fabrication comes to light. All the NDT testing of the welds passed with flying colours, distortion even with all that welding was minimal. Additionally, with all the extensive controls in place including surveys and workshop assembly of sub assemblies the 5 000 torqued bolts for the finished erected headgear all fitted without the need to make any on site adjustments!

The installation was planned in two phases, phase one was up to the 45L (level) over the Christmas break and phase two the 59L and 69L sheave decks and crane gantry over the Easter break. To keep the partially erected framework stable between the Christmas and Easter shut-down necessitated tying the partly erected headgear to the concrete headgear. This in itself required devising a method of hydraulically jacking the legs open by 100mm to install temporary props on the southern side. Removal of the temporary props was another of those interesting challenges.

The knuckles used to join the legs to the beams alone weigh in at an impressive 40 (approx) tons each. Their strange shape meant juggling with the loading requirements to ensure that the abnormal loads could pass under the existing bridges between the Carletonville workshop and the South Deep Mine site near Western Areas.

A few other interesting facts are that the structure is now the tallest steel mine-headgear in the southern hemisphere at some 90 metres high. In its nature, the sloping legs are off square to help bring the rope and wind forces down to the ground. The entire structure had to be erected from the West side of the existing concrete headgear due to lay-down area space limitation and poor ground conditions on the East side.

The site safety record is fantastic, well done to the whole construction team.

Are you still surprised why it was a 'no-brainer' for our judging panel to select the new headgear for Gold Fields South Deep to be the category winner in the Mining and Industrial Category? This headgear stands proudly among its predecessor category winners.

## JUDGES' COMMENT

by Neil Penson representing the Constructional Engineering Association

The new head gear was especially impressive for two main reasons: steel was the only viable construction medium that would satisfy the complex, constraint-dominated client's requirements and exceptional technical and project management expertise was required to execute the work in accordance with these stringent conditions.

The project is a flagship for the use of steel as the new headgear is the highest in the world.

In conclusion a most challenging requirement was fully satisfied by the excellent use of steel and the related design, fabrication and erection activities. The outcome is a credit to all involved, from customer to workforce.

## project team

**Developer/Owner:**

Gold Fields Shared Services (Pty) Ltd

**Project Manager:**

Gold Fields

**Structural Engineer:**

Hatch Africa

**Main Contractor:**

Steel Services and Allied Industries

**Steelwork Contractor:**

Steel Services and Allied Industries

**Specialist Craneage and Lifting Equipment:**

Sarens

**A-frame Foundations:**

M&R Construction

## Tower for Mascom Wireless Botswana Innovation Centre

Mining and industrial category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Mascom Wireless – Botswana

Structural Engineers:

Messrs Ritchie Midgley

Messrs Sectional Poles

Quantity Surveyor:

In House Brolaz South Africa (Pty) Ltd

Project Managers:

In House Brolaz South Africa (Pty) Ltd

Brolaz Botswana (Pty) Ltd

Main Contractors:

Brolaz South Africa (Pty) Ltd

Brolaz Botswana (Pty) Ltd

Steelwork Contractor:

Sectional Poles A Division of Harrison and White Investments (Pty) Ltd



## Unilever Dry Food Distribution Facility

Mining and industrial category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Unilever SA

Architect:

Elphick Proome Architects

Structural Engineer:

Sutherland Engineers

Quantity Surveyor:

Mbatha, Walters & Simpson

Project Manager:

Mbatha, Walters & Simpson

Main Contractor:

Stefanutti Stocks

Steelwork Contractor:

Impact Engineering cc





## Dorstfontein Overland Conveyor River Crossing

Mining and industrial category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Total Coal of South Africa (Pty) Ltd

Structural Engineer:

Holley and Associates

Project Manager:

DRA Mineral Projects (Pty) Ltd

Main Contractor:

Renniks

Steelwork Contractor:

Louwill Engineering



## Impilo Entsha: New Building Project – Kellogg's, Springs

Mining and industrial category nomination

Shortlisted

### PROJECT TEAM

#### Developer/Owner:

Kellogg Company of South Africa (Pty) Ltd  
Dion Metcalfe (Senior Director of  
Engineering Asia Pacific)

#### Structural Engineer:

Greene Consulting Engineers (Pty) Ltd

#### Quantity Surveyor:

Greene Consulting Engineers (Pty) Ltd

#### Project Manager:

Greene Consulting Engineers (Pty) Ltd

#### Main Contractor:

JJF Construction cc

#### Steelwork Contractor:

Imbriolo Engineering Works (Pty) Ltd

#### Detailers/Detailing Company:

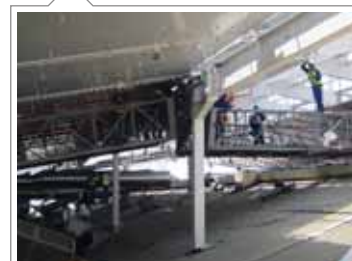
A. Leita Steel Construction (Pty) Ltd

#### Cellular beam supplier:

Macsteel Trading (Pty) Ltd

#### Food Facility Engineer:

Viko Consulting Engineers



## Strandfoam Kosmosdal

Mining and industrial category nomination

### PROJECT TEAM

#### Developer/Owner:

Strandfoam Group (Pty) Ltd

#### Architect:

Hendrik Conradie

#### Structural Engineer:

Dahcon Structural Engineering cc

#### Main Contractor:

Gothic Construction (Pty) Ltd

#### Steelwork Contractor:

Central Welding Works (Pty) Ltd

#### Cellular Beams Supplier:

Macsteel Trading (Pty) Ltd



## Renexcon

Mining and industrial category nomination

### PROJECT TEAM

Developer/Owner:

Motherson Group

Architect:

Les Barners & Associates

Structural Engineer:

C & S Projects

Quantity Surveyor:

Renexcon

Project Manager:

Renexcon

Main Contractor:

Renexcon

Steelwork Contractor:

B & T Steel



## Monsanto

Mining and industrial category nomination

### PROJECT TEAM

Developer/Owner:

Monsanto SA (Pty) Ltd

Architect:

LMH Designs

Structural Engineer:

IBC International & Iliso Consulting

Quantity Surveyor:

Davis Langdon

Project Manager:

IBC International (Pty) Ltd

Main Contractor:

Edilcon Construction (Pty) Ltd

Steelwork Contractor:

B & T Steel





## Eureka DIY Solutions

Mining and industrial category nomination

### PROJECT TEAM

Developer/Owner:

Eureka DIY Solutions (Pty) Ltd

Architect:

Entity Architects (Pty) Ltd

Structural Engineer:

Entity Engineering (Pty) Ltd

Project Manager:

Renico Construction (Pty) Ltd

Main Contractor:

Renico Construction (Pty) Ltd

Steelwork Contractor:

Robor (Pty) Ltd



## South Deep Mine New Rock Winder House

Mining and industrial category nomination

### PROJECT TEAM

Developer/Owner:

Gold Fields

Structural Engineer:

Gold Fields

Quantity Surveyor:

Gold Fields

Project Manager:

Gold Fields

Main Contractor:

Gold Fields

Steelwork Contractor:

Tass Engineering (Pty) Ltd





# Steel Awards 2011

## Supporting live and local talent

### GAUTENG

#### MASTER OF CEREMONIES:

Ryan Hogarth

*Ryan Hogarth is a Social Media Catalyst. He speaks frequently to business and conferences on re-engineering business through social media and consults businesses through the 5 step programme to devising and implementing a sustainable social media programme. He also consults executives on their social media presence. He writes his own blog on the social media landscape in South Africa.*

FB: Fb.me/RyanRHogarth @ryanhogarth • ryan@hogarth.co.za • +27 (0)82 4418417 • www.ryanhogarth.com

Enquiries/bookings for Ryan Hogarth (and other speakers) could also be made with  
Unique Speaker Bureau: [www.uniquespeakerbureau.com](http://www.uniquespeakerbureau.com) or call Paul on 083 268 6057



#### ENTERTAINMENT ARTIST:

Conrad Koch

*Conrad is a highly skilled ventriloquist and comedian with an MA in the Social Anthropology of Corporate and African Cultures. He works the global circuit along with his eccentric and very outspoken group of puppets and also creates customised shows for training purposes on demand. Conrad was awarded Entertainer of the Year 2010.*

conradkoch@mweb.co.za • +27 (0)82 883 3721 • +27 (0)11 482 1625 (f) • www.conradkoch.co.za







# Steel Awards 2011 Supporting live and local talent

## KWAZULU NATAL

### MC AND ENTERTAINMENT ARTIST:

Aaron McIlroy

*Aaron McIlroy is one of South Africa's most popular entertainers, both on the public and corporate entertainment circuits. His work in the South African theatre industry has always focused largely on getting his audience to laugh till they cry, but his creative skills as a fully trained and highly experienced actor and stage producer extend far beyond the scope of general stand-up comedy entertainers.*

To book or enquire about Aaron McIlroy please contact:

Debbie Sumner Entertainment

[debbie@dsentertainment.co.za](mailto:debbie@dsentertainment.co.za)

+27 (0)82 654 3344

+27 (0)31 312 7433

[www.dsentertainment.co.za](http://www.dsentertainment.co.za)

[www.aaronmcilroy.co.za](http://www.aaronmcilroy.co.za)





# Steel Awards 2011

## Supporting live and local talent

### WESTERN CAPE

#### MASTER OF CEREMONIES:

(TheOther) Michael Jackson

*Michael is a globally sought-after master of ceremonies and speaker on the subject of Change, having addressed over 950 conferences across Europe, the Middle East, Asia, the USA and Southern Africa and audiences ranging from factory workers to Heads of State over the past decade. Former South African President Nelson Mandela has called him "a national treasure". He's worked personally with Bill Gates and Richard Branson, among other global leading personalities. He writes for a number of magazines, has presented radio and business television series and is a very busy voice-over artist.*

#### Enquiries/bookings:

FB: [theothermichaeljackson.com](http://theothermichaeljackson.com) • [michael@theothermichaeljackson.com](mailto:michael@theothermichaeljackson.com)  
+27 (0)83 641 5809 • +27 (0)86 503 0278 (f)

Enquiries/bookings for Michael Jackson and other speakers could also be made with Unique Speaker Bureau: [www.uniquespeakerbureau.com](http://www.uniquespeakerbureau.com) or call Paul on 083 268 6057

#### ENTERTAINMENT ARTIST:

Nik Rabinowitz

*Nik has established himself as the world's leading Xhosa speaking Jewish comedian, is a seasoned master of ceremonies for private and corporate events and is known to many for presenting the 'Week that wasn't' on Cape Talk Radio and Radio 702.*

#### Bookings/enquiries:

Emma Ress – ERM  
[emma@ermstars.com](mailto:emma@ermstars.com) • +27 (0)21 465 1000 • [www.nikrabinowitz.co.za](http://www.nikrabinowitz.co.za)



The entrances to the venues of the Steel Awards functions in Durban, Cape Town and Johannesburg were dominated by structural steel sculptures. At 2.15 meters high and weighing 770kg, these structures could hardly be missed.

The purpose of these sculptures at Steel Awards is purely aesthetic. Various shades of green were chosen as the colour scheme of the trees, to carry the not-so-subtle message that 'steel is green'. The connection plates and cleats were made bright red, symbolising ripe fruit on the tree. This is clearly a living tree, not the origin of a construction material which has sometimes been seen as a competitor to structural steel!

But the sculptures are intended for, arguably, a more important role than serving as part of the decorations for Steel Awards. After the function each of them will be donated to a university, to be erected outside the engineering department, following the example set by the American Institute of Steel Construction. There they will obviously continue to serve their aesthetic role, but they will also bring structural steel to the attention of students, lecturers and visitors on a daily basis. More than that, they will serve as an educational tool.

Each sculpture will come with an information sheet lecturers can use to explain its subtleties to students. For this reason these structures were carefully designed to show all the elements used in steel construction – beams, columns, purlins, etc. – consisting of all the plates and profile types on the market. All the common connection types are also represented, from simple cleat connections to a portal frame haunch. It will take at least a lecture to get to grips with all aspects of the sculpture, but the lessons learnt should be much deeper than usual, and the tree will stand there for posterity to be consulted, even after the student has graduated.

The other relevant statistics, besides the height and weight, are: 61 separate assemblies, fabricated from 116 parts, 196 bolts and a total painted area of 23.5m<sup>2</sup>.

The SAISC proudly acknowledges the contribution of time, materials and energy of the following members:

Cadex SA – design, drawing and detailing by John Swallow on Tekla Structures

Aveng Trident Steel – supply of steel, fabrication and transport operations coordinated by Janeke Nel in Gauteng, with regional logistics handled by Cape Town and Durban branches

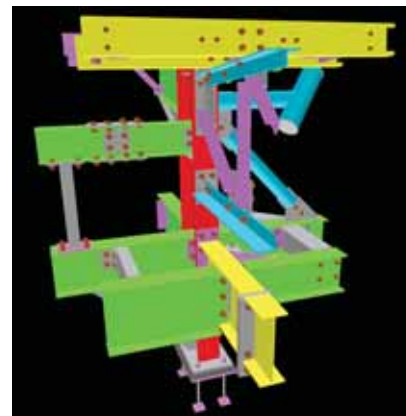
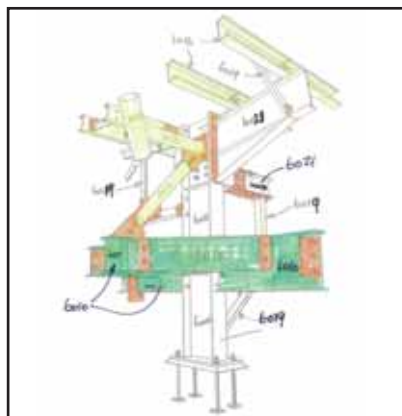
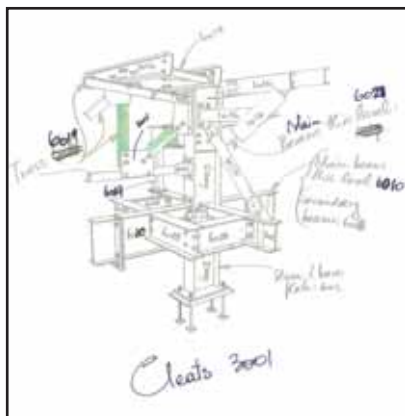
Bulldog Projects – painting of structures arranged by Mike Book

Aveng Grinaker-LTA Mechanical & Electrical DSE Fabrication – fabrication, with Gary Jones, as the critical go-between and manager of the project

Union Structural Engineering Works – Michael Papanicolaou, for erection and logistics in Cape Town.

Transvaal Pressed Nuts, Bolts & Rivets – Evo Cerrai, for supply of bolts

Avellini Bros. – Ricardo Avellini, for erection and logistics in Durban



The 'artistic' process of creating the connections tree.

## STEEL SCULPTURES AT STEEL AWARDS

*But the sculptures are intended for a more important role than serving as part of the decorations for Steel Awards. After the function each of them will be donated to a university, to be erected outside the engineering department.*



## AVENG GROUP

Main Sponsor

Roger Jardine - CEO

"The Steel Awards continue to reflect excellence within the steel industry. We are pleased to be the main sponsor of this event for the second year in a row."

## THE ASSOCIATION OF STEEL TUBE AND PIPE MANUFACTURERS OF SOUTH AFRICA

Tubular Award Sponsor

Colin Shaw – Executive Director

Colin Shaw the Executive Director of the Association of Steel Tube and Pipe Manufacturers of South Africa (ASTPM) has been involved in this industry for the last 17 years. He joined Brollo in 1994 and was then transferred within the group to Barton Precision Tube in 1996. After consolidation he was part of the group marketing department of Robor Tube from where he retired in September 2009. He took up his current position in October 2009.

He has been a supporter of the SAISC almost since its inception and has attended a number of Steel Awards dinners. He is proud to present the Tubular Award on behalf of his association.

## MACSTEEL

Photo Competition Sponsor

Vaughan Reiche, Managing Director of Macsteel Coil Processing

Macsteel has recently commissioned the world's most technologically advanced coil stretcher leveler plant ensuring dimensional and flatness capabilities never before experienced on this continent.

Vaughan Reiche, Managing Director of Macsteel Coil Processing, says that he is particularly excited about the opportunities, operational efficiencies and cost saving capabilities the plant will afford Macsteel's most valued clients. The multimillion rand investment ensures that product from this plant will be completely flat and stress free, devoid of all warps, centre buckle and edge wave.

The plant is designed to decoil and level steels with yield strengths up to 700MPa.

## ARCELORMITTAL SA LIMITED

Partner Sponsor

Nokululeko 'Nku' Nyembezi-Heita – CEO

Nonkululeko 'Nku' Nyembezi-Heita is the Chief Executive Officer of ArcelorMittal South Africa. She was appointed to this position in March 2008. Prior to this, Ms Nyembezi-Heita served as the Chief Officer of Mergers & Acquisitions for the Vodacom Group and before that, Chief Executive Officer of Alliance Capital.



Roger Jardine, CEO – Aveng Group.

# THE FACES BEHIND THE COMPANIES: PROFILES AND QUOTES FROM SOME OF OUR SPONSORS

*"The Steel Awards continue to reflect excellence within the steel industry.*

*We are pleased to be the main sponsor of this event for the second year in a row."*

Roger Jardine - CEO, Aveng Group



Colin Shaw, Executive Director - ASTPM.



Vaughan Reiche, Managing Director of Macsteel Coil Processing.



Nokululeko 'Nku' Nyembezi-Heita, CEO - ArcelorMittal SA Limited.

Ms Nyembezi-Heita has a B.Sc. Hons degree in electrical engineering from the University of Manchester Institute of Science & Technology and a Masters degree in the same discipline from California Institute of Technology. She also has an MBA from the Open University (UK).

Ms Nyembezi-Heita serves as non-executive director on the boards of Old Mutual and the JSE Securities Exchange.

Da Silva started his career with Cosira as a quality control inspector in 1993. Later, armed with a BSc from the University of the Witwatersrand and an MBA (Cum Laude) from Milpark Business School (South Africa), da Silva committed to extending the Group's Pan-African footprint. Through careful investment in technology and human capital, Da Silva has helped establish international best practice in the Group's subsidiaries, transforming the Group into a regional player, and a project and construction solution company of choice.

## B&T STEEL

### Partner Sponsor

#### Ben Dicks – Marketing and Sales Director

Ben Dicks, B&T Steel's Marketing and Sales Director, says that the company has Africa to thank for their slightly better results during 2011. Projects in Mozambique, Angola, Mauritania, Sierra Leone and Zambia, represents 30% of their business. Concerns over debt levels in Europe and US, as well as slow economic growth in China and India, have raised fears of a double dip recession. "We cannot afford to be under the illusion that China is not a threat", says Dicks. "A new cement plant has been awarded to a Chinese contractor right in our backyard, without us even being given the opportunity to quote. Despite this, we remain optimistic for 2012".

## COSIRA GROUP

### Partner Sponsor

#### John da Silva (Jnr) – CEO of Silva Group Holdings

John da Silva (Jnr), CEO of Silva Group Holdings, the holding company of the Cosira Group, has established himself as an innovative leader in the African construction industry.



Ben Dicks, Marketing and Sales Director - B&T Steel.



John da Silva, CEO - Silva Group Holdings.



Valentin Emanuel Kaltenbach, CEO - Kaltenbach.

## FIRST CUT/KALTENBACH

### Partner Sponsor

#### Andrew Poole – Managing Director of First Cut

In 1998 Andrew Poole, born in 1967, acquired a local manufacturer of cutting products called Somta Saws, and the resulting merger was the start of First Cut.

He studied a B.Comm at Natal University where he met his wife Janine. He is a sports fanatic and spends most of his leisure time playing golf with his sons, Nicholis (11) and Christopher (9).

#### Valentin Emanuel Kaltenbach – CEO of Kaltenbach

Valentin Kaltenbach, born in 1968, is CEO and main shareholder of the Kaltenbach group based in Lörrach, Germany. The company was started by his great-grandfather in 1887 and is family-owned since then. He studied mechanical engineering at the universities of Karlsruhe Germany and Kitchener-Waterloo, Canada. During this period, he met his wife Dorothea.

He spends his leisure time with his four sons and two daughters. Dorothea has worked at a centre for mental and physical handicapped children in South Africa where she learned to love the country, its people and culture.

## NJR STEEL HOLDINGS

### Partner Sponsor

#### Colin Chapman – Managing Director

"2011 has been punctuated by an inconsistency of steel supply due to mill breakdowns, order cancellations and allocations. Nevertheless our grouping, entrepreneurial culture and customer ethic continue to position us to take advantage of these turbulent times and offer maximum value to our existing and future customer base."

## VITAL ENGINEERING

### Partner Sponsor

#### Dodds Pringle, Managing Director

Dodds Pringle joined the family business, Vital Engineering, after completing his military service. While handling the marketing of the company and becoming a draftsman, he simultaneously completed a number of part-time business courses through various institutions. In 1999 Dodds took over as Managing Director of the company when his mother passed away. He is involved with the SAISC, the International Steel Fabricators and the SA Quantity Surveyors Association.



Andrew Poole, Managing Director - First Cut.



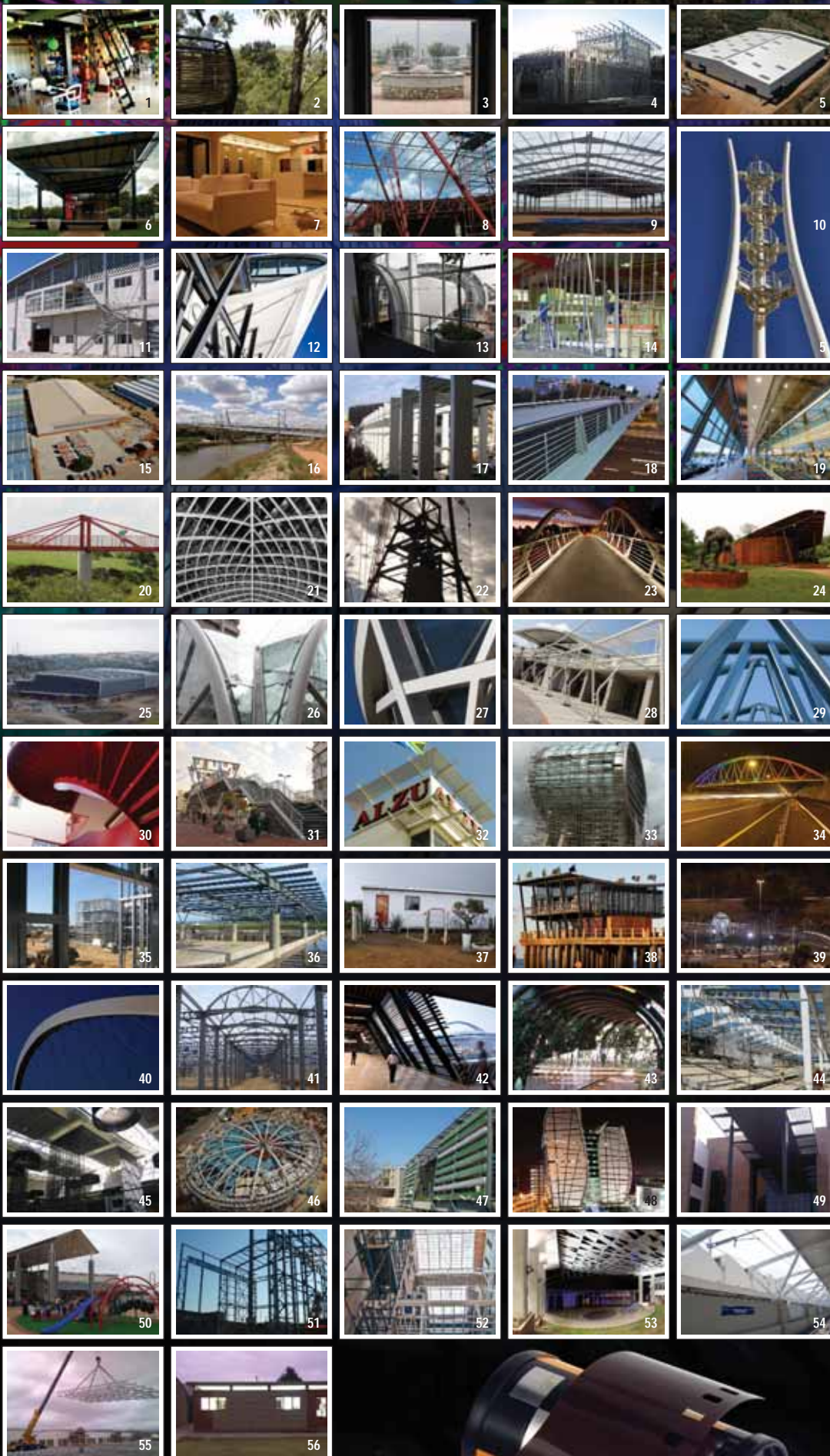
Colin Chapman, Managing Director - NJR Steel Holdings.



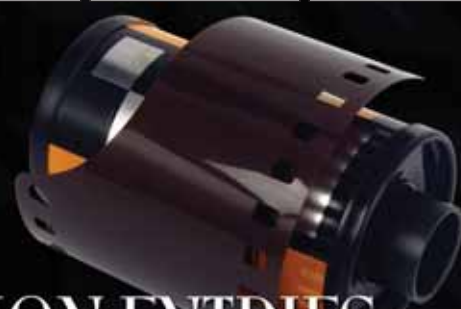
Dodds Pringle, Managing Director - Vital Engineering.



- 1 Turbine Hotel and Spa
- 2 The Treehouse
- 3 Phuthaditjhaba Stable Block for SAPS
- 4 House Raubenheimer, Bela Bela
- 5 Renexcon
- 6 Laerskool Pretoria-Oos Tennis Clubhouse
- 7 House Kahler
- 8 Levy Business Park, Lusaka, Zambia
- 9 Monsanto
- 10 Tower for Mascom Wireless Botswana Innovation Centre
- 11 Novo Packhouse
- 12 Philippi Soccer Stadium
- 13 Comair Simulator Building
- 14 2010 International Broadcast Centre
- 15 Eureka DIY Solutions
- 16 Dorstfontein Overland Conveyor River Crossing
- 17 Mangaung Intermodal Bridge, Hangar Street
- 18 Buitengragt Pedestrian Bridge
- 19 Pick 'n Pay Retail Centre
- 20 Zwelitsha Pedestrian Bridge
- 21 Mall of the North
- 22 New Headgear for Gold Fields South Deep Twinshafts Vent Shaft
- 23 Markgraaff Pedestrian Bridge
- 24 Untamed
- 25 Unilever Distribution Facility
- 26 Offices for the Gauteng Provincial Government – Economic Development
- 27 Waterkloof Corner
- 28 Riverside Mall New Entrance
- 29 Bela Vista, Mozambique
- 30 St John's College – Spiral Stair
- 31 Waterkant Pedestrian Bridge
- 32 Alzu Petroport
- 33 MCB Ebene for Mauritius Commercial Bank
- 34 Lynwood Glen Pedestrian and Pipe Bridge
- 35 2011 All Africa Games – Athletes' Village
- 36 Facilities at Kisumu Airport
- 37 Parys Project
- 38 Moyo on the Pier
- 39 Fountains Circle
- 40 Crystal Towers Bridge
- 41 Strandfoam Kosmosdal
- 42 Moses Mabhida Station
- 43 Saxon Hotel, Skywalk Bridge
- 44 Impilo Entsha: New Building Project Kellogggs, Springs
- 45 Upper East Side
- 46 Protea Court Rooflight
- 47 Engineering III Building and Parkade at the University of Pretoria
- 48 Alice Lane
- 49 Walker Creek Entrance Canopies
- 50 Brits Mall
- 51 South Deep Mine Rock Winder House
- 52 Pretoria Government Building Rehabilitation
- 53 Lebone College II
- 54 Gautrain – Pretoria Station
- 55 KwaNobuhle Shopping Centre
- 56 Glenwood House Private School



# STEEL AWARDS PHOTO COMPETITION ENTRIES





## OVERALL WINNER

Alice Lane by Leon Krige

Alice Lane was an attraction the moment its arched skeleton first appeared on the Sandton skyline – the anomaly to the generic blue glass extrusion proliferates this corporate no-man's land. The free curves are echoed in the playful edges which challenge curtain wall building skins, a rare delight.

The image was captured in true character of all Jozi Gotham nocturnes, with no formal permission. Climbing fire escapes to the top of Sandton's parkade, negotiating with power hungry security guards, the images were 'stolen' over the rooftop.

Multiple high resolution long exposures either stacked for shift lens, or stitched from tele-shots, created these highly detailed compositions which capture this exciting form.

### Nocturnal photographic documentation of JHB & other cities

This series of images forms part of an ongoing investigation into the hidden structure of the city, investigating the weave of its fabric from different angles, vantage points and distances.

*continued on page 42...*

## PHOTO COMPETITION



Leon Krige.



### Overall winner of Steel Awards 2011 Photo Competition

**Project:** Alice Lane

**Photographer:** Leon Krige



Photo Competition Sponsor



## OVERALL WINNER *continued*

Nocturnal tissue samples explore the nature of its living fabric: when inhabitants are closed within secure walls the fabric reveals itself behind translucent, multi-coloured membranes.

Occasionally occupants are revealed behind luminous windows, or partly hidden by skins of translucent textile, steel, glass, brick and concrete.

### Profile

Leon F. Krige was born and raised in Johannesburg, studied architecture at the University of the Witwatersrand, did his post-graduate at the Stedelschule,

Frankfurt am Main. He is currently studio-master for 4th year Architectural Theory and Design at the University of Johannesburg.

He has been documenting cities and living organisms as a teenager since 1976, the year of the Soweto riots.

Contact him at +27 (0)83 462 2767 or [leon.krige@gmail.com](mailto:leon.krige@gmail.com)



## ◀ KwaZulu-Natal Winner

### Project:

Moyo on the Pier

### Photographer:

Angela Shaw

## Western Cape Winner ▶

### Project:

Philippi Soccer Stadium

### Photographer:

Adam Letch





Category nominations

# tubular structures







# WINNER: TUBULAR STRUCTURES

## SAXON HOTEL, SKYWALK BRIDGE

Award sponsored by the Association of Steel Tube and Pipe Manufacturers of South Africa (ASTPM)

*The use of tubular steelwork for the project was a given due to its 'strength-to-slenderness' capabilities and the requirement to provide an unobtrusive and elegant means of safely moving between the hotel and villas while soaking in the ambience of the location.*



The Saxon Hotel Skywalk project is a spiral walkway bridge which winds its way through the heavily wooded grounds of the Saxon Boutique Hotel in the prestigious suburb of Sandhurst.

The skywalk connects the main hotel and conference facilities to three new, ultra luxurious villas situated in an indigenous forest on the southern side of the property. The project includes lifts at both ends providing access to the walkway at the hotel end and to underground parking at the villa end.

Snaking its way seemingly unsupported through the forest, the skywalk bridge gives the impression at night of a fibre-optic cable floating in mid-air.

The use of tubular steelwork for the project was a given due to its 'strength-to-slenderness' capabilities and the requirement to provide an unobtrusive and elegant means of safely moving between the hotel and villas while soaking in the ambience of the location. Timber was used for the flooring of the skywalk with glass handrails down both sides while the roof is a canvas canopy fitted to thin tubular rafters welded across the top chords of the bridge.





The skywalk spans 76 metres from lift shaft to lift shaft and has five intermediate supports hidden in the forest. The diameter of the spiral is 2.85 metres and the main chords are almost equally spaced around the spiral with the two bottom chords inside the spiral and the two top chords outside the spiral.

Since the skywalk curves both horizontally and vertically over its length, it was impossible to fabricate its spiral 'diagonals' using a fully rolled spiral

tube. They were rolled in partial circular segments instead. These segments were then assembled with the main chords in special jigs and located by thread-bar studs at each intersection point utilising backing sleeves to obtain full penetration welds at all pipe joints.

Detailing of the structure was an achievement in itself and required the dedication of an experienced detailer using 3D detailing software and working in close conjunction with both the design engineer and the steelwork contractor to develop a set of practical and workable drawings to construct the structure from.

The structure was fabricated in segments that allowed easy transport to site. However, getting the segments onto site and to their final installed locations was not a simple exercise at all.

These segments varied in length between ten and thirteen metres and the shorter straight sections were able to be taken through the very



large but at the same time 'tight fit' main entrance gate on the transport trailer up the winding driveway to the hotel.

The long curved sections could not be taken through the gate or up the driveway with a horse and trailer and had to be craned over the high boundary wall and placed on a purpose made trailer for the final leg of their journey.

A crane hoisted the sections very carefully through the trees and positioned them onto temporary scaffold towers before being aligned and welded together in-situ. It was important (and non-negotiable) not to damage the trees and this required many tedious re-setups of the mobile crane before they could be finally positioned.

The chosen method of construction of the walkway worked out extremely well and was aided by very accurate detailing and good communication with, and assistance from, the professional team enabling it to be completed in time for the opening of Phase 2 of the Saxon Hotel's extension project and ultimately for visitors to the World Cup 2010.

## project team

**Developer/Owner:**

Saxon Hotel

**Architect:**

Len Lategan Architects

**Structural Engineer:**

MVW Consulting Engineers

**Quantity Surveyor:**

Brian Heineberg and Associates

**Project Manager:**

SIP Project Managers P/L

**Main Contractor:**

GIP Builders P/L

**Steelwork Contractor:**

Impact Engineering Gauteng cc

**Industrial Painters:**

Dram Industrial Painters



Len Lategan.



Marten van Wyk.



Rob Mylroie.

### JUDGE'S COMMENT

by Peter Curr, representing the Association of Steel Tube and Pipe Manufacturers (ASTPM)

What has Walt Disney done to us? We are trapped in this giant python! How can we get out? Eventually we pop out and land in the jungle. We look around, looking for Mowgli, Baloo and Akela. Then we look back at the giant python.

This is in fact not python it is 27 tons of tubular art. The lines are sleek, smooth and flowing. And we are in the middle of Sandhurst; the only jungle is of a concrete nature. This is no childhood adventure – this is the serious matter of Steel Award judging.

But still, it was so much fun imagining Jungle Book days of weird and wonderful things but judging must go on. It was great to be a child once again.

### COMMENTS FROM SOME MEMBERS OF THE PROJECT TEAM

*Len Lategan, architect*

"The Saxon Skywalk was a small but stimulating team project and for me as the architect, the cherry on the cake of the whole Saxon Hotel extension project.

This project came about when the client expressed his wishes to me to design a link between the existing Saxon Hotel and new Saxon Villas. After measuring, taking photos and doing concept drawings from all angles, a beautiful tubular spiral steel skywalk was the end result.

I would like to thank the client for the experience and everyone involved who helped to bring creative ideas to reality in steel, glass, canvas and wood."

*Marten van Wyk, engineer*

"This was an exciting challenge which was definitely a team effort to ensure the successful completion of the project. Our main focus on the design from a structural point of view was to limit the deflection of the spiral bridge over the large spans, as the handrails were to be in glass with limited allowance for movement. The spiral bridge was erected in sections and spliced on site. The project was completed without any major difficulties due to the expertise of the overall project team."

*Rob Mylroie, steelwork contractor*

"When I worked on the concept with the PQS I knew it was a Steel Awards winner, then when I saw where it had to go through this natural forest, I thought I may have bitten off more than I could chew. The end result is testimony to what can be done with willpower and steel."



## Fountains Circle

Tubular structures category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

City of Tshwane

Architect:

Responsive Enviromental Design

Structural Engineer:

P Design cc

Quantity Surveyor:

Responsive Enviromental Design

Project Manager:

Responsive Enviromental Design

Steelwork Contractor:

Cadcon (Pty) Ltd



## Mall of the North

Tubular structures category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Flanagan & Gerard, Moolman Group and Resilient Property Income Fund

Architect:

MDS Architecture

Structural Engineer:

L&S Consulting

Quantity Surveyor:

Norval Wentzel Steinberg

Main Contractor:

WBHO Construction North

Steelwork Contractor/s:

OmniStruct Nkosi (Pty) Ltd, Guestyn and Horak

Detailers/Detailing Company:

OmniStruct Nkosi (Pty) Ltd



## Comair Simulator Building

Tubular structures category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Comair Ltd

Architect:

Wim Swart & Partners

Structural Engineer:

ICP Structural Engineers

Quantity Surveyor:

Schoombie Hartmann Pretoria

Main Contractor:

Edilcon Construction

Steelwork Contractor:

Ferro Eleganza

Cladding Supplier and Contractor:

Global Roofing Solutions (Brownbuilt)





## Offices for the Gauteng Provincial Government

Tubular structures category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Gauteng Provincial Government:  
Economic Development

Architect:

Motsepe Architects – previously NOA  
Architects (Jhb)

Structural Engineer:

Trowbridge, Higson-Smith &amp; Associates

Quantity Surveyor:

BTKM

Project Manager:

PDNA PM Services

Main Contractor:

Trencon

Steelwork Contractor:

OmniStruct Nkosi (Pty) Ltd



## Upper East Side

Tubular structures category nomination

Shortlisted

### PROJECT TEAM

Developer/Owner:

Swish Properties/Redefine

Architect:

Design 360

Structural Engineer:

Henry Fagan &amp; Partners

Quantity Surveyor:

Slabber Fick Associates

Project Manager:

Triple C

Main Contractor:

Gridco

Steelwork Contractor/s:

Anchor Steel Projects

M-rail

TARGET (now Just Engineering)

DLE Engineering

Mass Steel



## Facilities at Kisumu Airport

Tubular structures category nomination

### PROJECT TEAM

Developer/Owner:

Kenya Airports Authority

Architect:

Netherlands Airport Consultants B.V

Structural Engineer:

Netherlands Airport Consultants B.V

Main Contractor:

China Overseas Engineering Group Co. Ltd

Steelwork Contractor:

Cadcon (Pty) Ltd



## Riverside Mall New Entrance

Tubular structures category nomination

### PROJECT TEAM

Developer/Owner:

Old Mutual Properties

Architect:

The Design Partnership

Structural Engineer:

WSP Structures Africa (Pty) Ltd

Quantity Surveyor:

Okunene/

NWS Quantity Surveyors

Project Manager:

Old Mutual Properties

Main Contractor:

Macwin Construction (Pty) Ltd

Steelwork Contractor:

Spiral Engineering



## Gautrain – Pretoria Station

Tubular structures category nomination

### PROJECT TEAM

Developer/Owner:

Gauteng Provincial Government

Architect:

Gautrain Architects JV

Structural Engineer:

Pretoria, Centurion & Midrand JV

Quantity Surveyor:

Bombela Civils JV

Main Contractor:

Bombela Civils JV

Steelwork Contractor:

Spiral Engineering cc





**SAISC MEMBERSHIP****STEEL PRODUCERS****ArcelorMittal South Africa**

Representative: Charles Dednam  
Tel: (016) 889 9111 Fax: (016) 889 5668  
charles.dednam@arcelormittal.com  
www.arcelormittal.com

**Davsteel (Pty) Ltd**

Representative: Coen Otto  
Tel: (016) 980 2121 Fax: (016) 988 3760  
ottoc@capegate.co.za  
www.capegate.co.za

**Scaw Metals Group**

Representative: Chris Booysen  
Tel: (011) 842 9364 Fax: (011) 842 9705  
millsales@scaw.co.za  
www.scaw.co.za

**STEELWORK CONTRACTORS****Eastern Cape****Uitenhage Super Steel cc**

Representative: Ginkel Venter  
Tel: (041) 922 8060 Fax: (041) 992 5923  
ginkel@uss.co.za

**Gauteng****A Leita Steel Construction (Pty) Ltd\***

Representative: Claudio J Leita  
Tel: (012) 803 7520 Fax: (012) 803 4360  
claudio@aleita.co.za  
www.aleita.co.za

**Bessemer (Pty) Ltd**

Representative: Fritz Hoogendyk  
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**Saint-Gobain Gyproc SA (Pty) Ltd**

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Andre Schlunz  
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**Saint Gobain - Isover**

Producer of insulation products  
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**OTHER MATERIAL AND COMPONENT SUPPLIERS****Avlock International**

Fastener and equipment supplier  
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**Kare Industrial Suppliers**

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**Marshall Hinds**

Distributor of Tyvek Building Wrap  
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**Speedfit Africa**

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**United Fibre Cement Co (UFCC)**

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**LARGE MANUFACTURERS****Allenby Housing cc**

Planning, design, development & manufacture of modular building solutions  
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**Circle Capital Developments**

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**Dezzo Roofing**

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**Kwikspace Modular Buildings Ltd**

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**Light Frame Homes cc**

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**Siteform Framing**

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**MANUFACTURERS****Inno Steel**

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Technical solution for cladding, roofing and flooring  
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**Bluescope Steel Southern Africa (Pty) Ltd**

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**Clyde Steel**

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### Corporate Maintenance Solution

LSFB, Office renovations, general maintenance  
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