OFFICIAL JOURNAL OF THE SOUTHERN AFRICAN INSTITUTE OF
steel CONSTRUCTION

NOVEMBER / DECEMBER 2018
VOL. 42 ISSUE 6

INTERNATIONAL PROJECTS IN STEEL

THE SAISC AND SUB-ASSOCIATIONS

2018 IN REVIEW

SOUTHERN AFRICAN INSTITUTE OF STEEL CONSTRUCTION

TASS ENGINEERING
(PTY) LTD

TASS ENGINEERING has been actively involved in Structural and Architectural Steel Fabrication and Erection for 50 YEARS

From small beginnings in 1968 Tass Engineering has grown to become one of South Africa's leading Architectural and Structural Steel Contractors

Tass Engineering - Discovery Head Office - Sandton

Contact details: Tel +27 (11) 975 0647 • Fax +27 (11) 970 1694 • E-mail tasseng@mweb.co.za.

www.tassengineering.com

OFFICIAL JOURNAL OF THE SOUTHERN AFRICAN INSTITUTE OF
steel CONSTRUCTION

NOVEMBER / DECEMBER 2018 VOL. 42 ISSUE 6

COVER PHOTO: Nike - The Pulse (Oregon USA)
PHOTO SUBMITTED BY: Spiral Engineering

FEATURES

THE SOUTHERN AFRICAN INSTITUTE OF STEEL CONSTRUCTION

Tel.:	+27 (0)11 726 6111
Website:	www.saisc.co.za
Instagram:	@saisc_steel @steelawards
YouTube:	http://bit.ly/SAISCYouTube
LinkedIn:	http://bit.ly/SAISCLinkedIn
Facebook:	http://bit.ly/SAISCFacebook
Twitter:	@saisc_steel

REGULARS

PUBLISHED BY:
Southern African Institute of Steel Construction 1st Floor, Block C, 43 Empire Road, Parktown West I (011) 726 6111 I www.saisc.co.za I info@saisc.co.za
EDITOR: Denise Sherman, denise@saisc.co.za **ADVERTISING:** advertising@saisc.co.za
LAYOUT: Sandra Addinall, +27 (0)11 868 3408 I +27 (0)83 601 7209 **REPRO AND PRINT:** TYPO Colour Printing Specialists cc
SAISC MANAGEMENT TEAM:
CEO: Paolo Trinchero, paolo@saisc.co.za I Technical Director: Amanuel Gebremeskel, amanuel@saisc.co.za
SASFA: John Barnard, john.barnard@saol.com I SAMCRA: Dennis White, dennis@saisc.co.za
POLASA: Kobus de Beer, kobus@saisc.co.za I STEASA: Keitumetse Moumakoe, keitumetse@steasa.com

SAISC COMMENT

PAOLO TRINCHERO
CEO, SAISC

FInDInG ThE "STEEL" LInInG In 2019: **FOCUS ON THE POSITIVE!**

"RESEARCH DEVELOPMENT AND INNOVATION REMAIN KEY TO ENSURING THAT OUR INDUSTRY REMAINS COMPETITIVE AND RELEVANT."

As we get close to the end of the year and each and every one of us is planning for the next, trying to make sense of the year we have just gone through, the SAISC would appreciate your input. We have just reviewed our strategy for the next six months and we hope to add more value to our members. Please keep an eye out for the annual report and give the strategic plan a read through.

For those of you who are not in favour of reading through long documents the idea is to be proactive and positive, focus on competitiveness, grow the "market", substitute imports and grow exports. Sounds easy, I know.

We were overly pessimistic in the first half of the year (July - December 2017) where significant political risks and uncertainty were the order of the day and overly optimistic in the second half, as years of corruption and mismanagement of the S.A economy will take much longer than we thought to unwind. There have been significant company closures, consolidations and associated job losses which are deeply concerning.

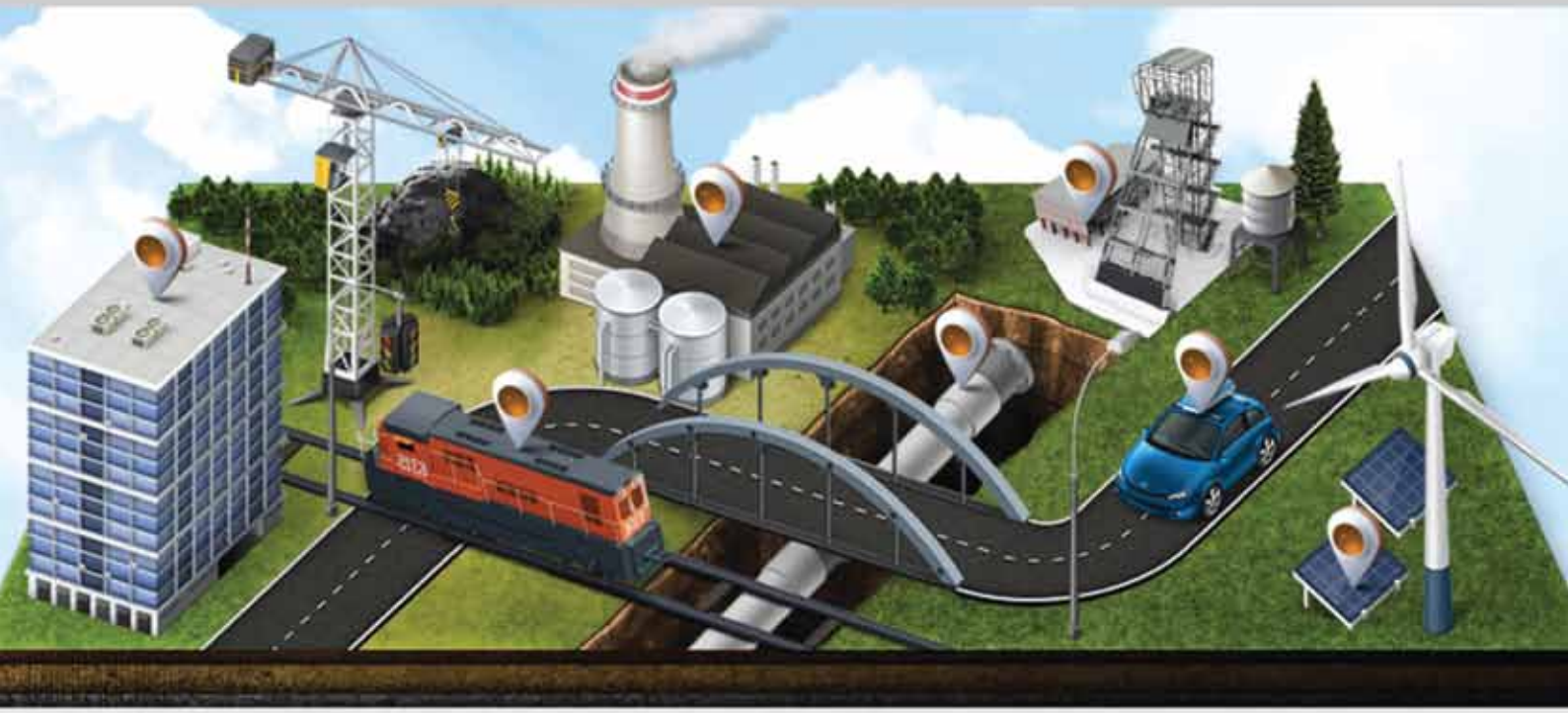
There are some green shoots after the jobs and investment summits but most of us feel that we may have to wait until after the 2019 elections before we see a real shift in market demand and a return to growth in steel consumption.

A small number of courses were offered this year thanks to Amanuel Gebremeskel, Hennie de Clercq at the University of Stellenbosch and Dr Geoff Krige. We hope to support and continue these initiatives. We are looking very carefully on how we can make it easier to reach our engineering and professional members using technology. Education and training remain key objectives of the institute with the results often seen in the future. We are planning on bringing Spencer back to lecture the famous "SAISC estimating course". If you are interested please get in touch with us so we can make sure you receive the invite for early next year.

Research development and innovation remain key to ensuring that our industry remains competitive and relevant. We managed to get some really innovative research done with the help of the universities but it is imperative that we find a way to restore proper funding to develop skills and foster innovation.

I was recently at the Mandela Mining Precinct where a competition was launched to create a new innovative rock drill which is manufactured entirely in South Africa. The SAISC and its members should work with other industries to assist in their localization and innovation projects and we should think about introducing similar competitions of our own. *(www.isidingodrill.co.za)*

I would like to thank the SAISC and sub-association staff, board, council and committee members for their support during the year. The next few years will be challenging and I expect a number of changes for the better.



Engineered • Steel • Solutions

Established in 1922, Robor is a world-class South African manufacturer and supplier of welded steel tube and pipe, cold formed steel profiles, structural steel products and associated value added products and services. Robor is active in most industries, including Mining, Transport – rail and road, Construction, Engineering, Agriculture, Energy, Water and Automotive.

Since the acquisition of Tricom, Robor supplies various telecommunication and power distribution systems, such as; Telecommunication Towers, Satellite Communication Structures and Transmission Towers for the distribution of electricity.

[Value Added Services]

Our range of value added services includes but is not limited to: Hot Dip Galvanizing for corrosion protection, Pipe and Tube cutting (2D and 3D), Punching, Drilling, Coatings and Linings, Pressure Testing, Welding (robotic, stick and submerged arc), Cutting, Wrapping, Painting, Packing, Fabrication of certain components and Ultrasonic Testing.

SAPVIA
South African Photovoltaic Industry Association

steel
SOUTHERN AFRICAN INSTITUTE OF STEEL CONSTRUCTION

ISF

POLRSA

robor

For more information:
Tel: +27 (0)11 971 1600 E-mail: info@robor.co.za www.robor.co.za

EDITOR'S NOTE

DENISE SHERMAN
MARKETInG MAnAGER, SAISC

WhERE hAS **THE TIME GONE?**

WE INCREASED OUR SOCIAL MEDIA PRESENCE WITH A FOCUS ON BRINGING POSITIVITY BACK TO THE STEEL CONSTRUCTION INDUSTRY WHILST SHOWCASING THE BEAUTY AND VERSATILITY OF STEEL AND INCREASING OVERALL AWARENESS.

In what seems like the blink of an eye, I'm wrapping up my third year of Steel Construction Journals. 2018 has been a busy year of innovation, consolidation and refining for the SAISC marketing department. In order to reinforce the SAISCs position as a respected and credible industry leader, we felt it was necessary to ensure that our brand, collateral and marketing initiatives were clear and consistent. This belief has resulted in reviewing, adapting and policing (thank you Liezel!) the way the SAISC brand is represented in all internal and external communications. It's not just about making things look pretty – but rather about reflecting of our unity, belief, values and resolve as an association.

The SAISC's new website was launched in December 2017 and has slowly started gaining traction. In addition to updating the look of the site the aim was to have a resource that would enable us to promote member projects, and provide proprietary content to members only by introducing login access. With the integration of our social platforms and the ability to update the site ourselves, we've seen a notable positive trend in our site traffic, as well as a reduction in the bounce rate.

In 2018 SAISC increased our activity and engagement with a wider market on our social media platforms. We increased our social media presence with a focus on bringing positivity back to the steel construction industry whilst showcasing the beauty and versatility of steel and increasing overall awareness. Information pertaining to events and training courses, industry developments, member news and so on were communicated that kept our stakeholders up to date with what's happening in the industry. Through these activities, we were able to communicate with all our industry stakeholders through direct messaging as well as interactively promote SAISC products/services, initiatives and support from our members and associations.

Brand refreshing and alignment has extended to all of our communication tools – including the Steel Construction Journal. While the look and feel has changed slightly in order to carry the SAISC brand, the content quality remains steadfast. The journal is available electronically on the SAISC website, along with the 2019 rate card and distribution.

We're looking forward to a fresh year of exciting ventures, and look forward to mastering the platforms we've been "experimenting" with. If you have any thoughts or suggestions on how we can make the Steel Construction Journal a more powerful resource, please feel free to send your comments to denise@saisc.co.za

PROJECT **PROFILES**

INTERNATIONAL

NIKE – THE PULSE

PROJECT TEAM

Client – Nike I **Artist** – Marco Cianfanelli I **Engineer** – John Duncan, Cadex Systems South Africa
Fabricator – Spiral Engineering cc

The Brief

A 'linear sculpture' fabricated in Grd 316 stainless steel and consisting of approximately 200 vertical members all supporting triangular, faceted panels which may interconnect in some instances.

The entire sculpture to be assembled in Johannesburg and then dis-assembled and packed for shipping to Oregon USA.

Planning

Being able to interpret one man's abstract vision into a physical entity is a skill few people would possess. So, began an intense series of planning meetings, idea swopping, mock up builds and lot of trial and error.

Technology played an important role as ideas became drawings and concepts began to take physical shapes. A strong partnership between the design team and the fabricator very quickly saw practicalities being introduced to the various mock ups and the individual shapes started to become recognizable as the multi-dimensional sculpture began to form.

The build

Several weeks of extremely detailed planning coupled with many hours of highly intricate detail drawing saw over 400 completed parts arriving at the fabrication shop. Each part an individual shape or cut and all carefully numbered were subjected to an intense polishing process before being set out in carefully prioritized sequences ready for assembly.

Each assembled component was certified by a member of the design team as he checked every angle, position and assembly order, before once again being processed through the polishing systems.

The base, in total over 20 meters long, was constructed in 8 individual sections consisting of 2 laser cut 5mm plates separated by 150mm spacers, and fitted with tubular sleeves at specific angles, which would support the vertical members. The base sections were bolted together to form a waving 'snake like' platform which would be positioned into a water feature at the site.

The 180 vertical members are 38mm diameter tubular sections each with uniquely laser cut slots to accept the faceted plates. Each of the 300 laser cut 3mm plates were uniquely shaped and precision bent at various positions and welded into slots on the vertical posts.

The vertical members are then slot guided into the sleeves in the base unit. The faceted plates form a multi-dimensional figure of a runner, which morphs into another figure as one moves along the length of the structure.

Packaging

The components, after a final touch up polish, were wrapped in bubble wrap and carefully tied down into timber crates, with great care being taken to avoid the possibility of chaffing on a long sea journey.

Intricate packaging lists were compiled indicating every position of each component in the crate, which would assist when unpacking in Oregon.

Crates were sealed at the fabrication shop before travelling by road to Durban, sea to New York, train to Oregon and finally by road to Nike's new world head office

Project profile link: https://youtu.be/3qGo-InxYz8

Article source: Kaarsemaker, N. (2018). Amazon Spheres A New Landmark On The Seattle Skyline. *Advantage Steel*, (Summer 2018), pp.30-34.

AMAZON SPHERES - SEATTLE

PROJECT TEAM

Owner – Amazon I **Architect** – NBBJ - Seattle I **Structural Engineer** – Magnusson Klemencic Associates, Seattle, WA
Fabricator – Supreme, Portland, OR I **Erector** – The Erection Company, Arlington, WA

When Amazon began work to develop their urban campus in the Denny Regrade area of Seattle, they sought to make a statement. They wanted to redefine the very nature of the modern workplace in the same way their company has redefined Internet retailing. "We wanted to do something that was not only great for employees, but for the city as a whole. It's all about our pioneering spirit, our being inventors," said John Schoettler, Amazon's real-estate director. (*Seattle Times*, January 03, 2017 – Angel Gonzalez) The crown jewel of the six-building complex that spreads across three city blocks are the three dome structures that have become known as The Spheres. Their striking design and dramatic appearance have created a tremendous buzz across Seattle's downtown and throughout the global architectural community. When people think of Seattle's landmarks – those buildings that define a city skyline – they will add The Spheres to that list.

The original project design called for a conservatory-styled structure to provide a refreshing and inspiring environment for Amazon employees, drawing on the tradition of Europe's grand Victorian gardens such as London's Kew Garden or Paris's Luxembourg Gardens. Just as these gardens brought a sense of the countryside to workers who had flocked to the cities during the industrial revolution, The Spheres were designed to provide a nature-infused refuge of creative space for the workers of today's fast-paced, high energy era of technologically driven change.

Dale Alberda, Principal at the architectural firm in charge of the project, NBBJ, said, "Amazon brought up the idea of a conservatory." So, the architects came up with several ideas, many of them traditional. But the night before one of the presentations to Amazon, the architect had an inspiration. "I drew a dome because we didn't have any. They immediately gravitated to that." It was a surprise to the city's design review board, which previously dealt with a more square vision. "I was a little astonished," said Gundula Proksch, the UW professor who sat on the review board. "This is a very sculptural, expressive building." From the point of view of the cityscape, the new design offered clear advantages: it was striking and interesting, much more so than many of the buildings going up around it. It's a landmark "breaking the relentlessness of towers," Proksch said. (*Seattle Times*, January 03, 2017 – Angel Gonzalez)

Their client liked the idea, so the design team set out to determine the best approach to construct the dome design. It soon became apparent that the best approach was to use the geometry of a Pentagonal Hexecontahedron. "A geometric shape called the pentagonal hexecontahedron forms The Sphere steel frame. The Spheres' shape is based on one of 26 known subsets of Catalan solids named for the Belgian mathematician who first described them in 1865. The building consists of elongated pentagonal modules that appear 180 times across the three spheres. By connecting each angle of the module to a centralized hub, the architects created a fluid yet modular pattern that could be repeated throughout the building." *https://www. seattlespheres.com/explore-the-building*

It was the extensive consultation both prior to and during construction between architect NBBJ, structural engineer Magnusson Klemencic Associates (MKA), and the fabricator team consisting of: Supreme Steel; Angle Detailing, the steel detailer; and the erector, The Erection Company, that was crucial to the success of the design and construction process that brought The Spheres to life. They needed to figure out the most efficient way to detail, document, fabricate, transport and erect the steel that would form the structural frame of

the dome shape and meet the logistical demands of shipping the assemblies to site and make the erection process possible. Jay Taylor, Senior Principal with MKA, said, "this project could not have been completed without the input from the fabricator, detailer and erector. There needs to be a willingness to participate in the design process by the contractor, steel sub-contractor team, architect and structural engineer." He described the work of the fabricator, detailer and erector as "top notch from top to bottom."

The structure was reverse engineered with constructability the key consideration. This discussion led to the Catalan design approach of five-sided steel assemblies that would be fabricated in Supreme's Portland facility and loaded five at a time onto trucks for the 2.5-hour drive north to Seattle. In a video produced by Supreme Steel's Portland-based fabrication team (*https://www.youtube. com/watch?v=TepMUfMpdzk*) they describe how they broke this project down into its key elements and worked methodically and systematically to execute the fabrication plan. Mike Eckstein, Supreme general manager, commented, "We do complex projects, but this is a step above." Other staff commented that The Spheres were "like nothing we have ever done," and "this is going to be a one-of-a- kind building; a showpiece."

Dan Wyland, Project Manger and Estimator, described the challenge of fabricating the Catalans when he said, "The most excited we are about working on this is that everything is different. The welding is different, the pieces are all rolled and twisted, there is nothing straight on it according to a normal building. The challenge was to bring all this together."

The fabrication process was a combination of technological innovation, selective outsourcing, logistics, scheduling and attention to detail. There were some 24 960 individual parts that needed to be ID stamped, tracked, sorted and assembled to bring the complex design to life in a manner that would ensure a perfect fit when the assemblies arrived on site and erected to form The Spheres. The tubes that formed the spine of the Catalan assemblies needed to be bent to very specific tolerances as each piece formed a distinctive part of the overall design. The sub-assembly parts were carefully catalogued and stored on pallets to ensure that all the requisite parts for each of the 247 Catalan assemblies were stored together to make the fitting and welding of each assembly proceed efficiently and in the proper sequential order.

Richard Wambold, Plant Superintendent, described how the project team at Supreme Steel implemented a Leica laser-guided assembly process that tracked the work on each Catalan assembly to ensure it conformed precisely to the digital project model. The design drawings contained no dimensions. These details were recorded in the model and the fabrication process relied exclusively on the data in the model. Specific jigs were designed for each of the sub-assembly pieces with the aid of Leica Geosystem tracking equipment. This allowed the assembly process to be tracked in the shop and at erection phase. The success of this project required that each Catalan assembly would fit exactly into its designated place in The Sphere. Each Catalan has 10 connection points, which then had to correspond to an additional 10 connection points for their adjacent assembly. Any deviation to the connections would have a ripple effect across the entire structure. To further amplify the need for accuracy in fabrication and assembly was that 2/3 of the assemblies had to be completed prior to the beginning of the erection process to maintain project schedule.

The completed Catalans had to appear seamless and smooth when they were delivered for erection. Each assembly had to appear like it was one piece of steel to create the desired look of The Sphere. The AESS requirements were specified as Level 4, the highest level due to the high visibility of the steel exoskeleton throughout the structure. This drew on the highest level of craftsmanship from the fitters and welders. The team at Supreme undertook extensive and very careful grinding of the connections with a finishing application of bondo to achieve the extremely smooth finish required. Each individual weld had to be inspected and tracked to ensure it met not only structural requirements but also the AESS guidelines.

Levi Wambold, Paint Supervisor for Supreme Steel, describes the work required to achieve the smooth, consistent and seamless appearance on each assembly in the project video. "This project pushed our team to perform at the top of their game," said Levi. Meeting the demands of this project required a high degree of accuracy and a commitment to craftsmanship by all the fitters, welders and painters. David Sadinsky, Project Architect for NBBJ, described the fabrication and finishing work of Supreme Steel as the same that you would see in aerospace manufacturing and major transportation tunnels. Very high praise indeed.

The attention to detail was continued in the transportation logistics of the super-sized loads from Portland to Seattle between midnight and 5 a.m. to arrive on site ready for erection. The erection process was tracked by the same Leica laser tracking system to ensure each assembly was connected in the correct location in the model to ensure the dramatic spherical shape was achieved. A testament to the precision and craftsmanship of the fabrication and erection team was that only three shims were used in the erection process.

The completed structure exceeded the expectation of the owner, architect and engineer. David Sadinsky of NBBJ summarized it well: "We created a legacy structure in our backyard and hometown that will be iconic, the new standard for distinctive work spaces." Creativity and collaboration combined with craftmanship created a landmark. Amazon has achieved its goal of a Victorian style conservatory within their downtown campus that met their desire to transform the modern workplace and make a statement to their employees and community.

Article source:
Article title: Design Awards – SteelConstruction.org
Website title: Steelconstruction.org
URL: https://www.steelconstruction.org/design-awards/2018/

THE ORDSALL CHORD VIADUCT

BCSA DESIGN AWARDS WINNER 2018

PROJECT TEAM

Architect – BDP | **Structural Engineers** – AECOM Mott MacDonald JV | **Specialist Designer** – Knight Architects
Steelwork Contractor – Severfield | **Main Contractors** – **Skanska BAM JV** | Client – Network Rail

The Ordsall Chord Viaduct is the iconic centrepiece at the heart of the Ordsall Chord, a new elevated railway connecting Manchester and Salford. The project reduces railway congestion, allows new passenger services to run, and creates wide economic benefits across the north west of England.

The viaduct carries the new two-track railway across both the River Irwell and the dual carriageway Trinity Way. It sits next to major heritage structures, part of the historic 1830 Liverpool to Manchester Railway, the world's first inter-city railway.

The context required a design which was of the highest architectural quality, with a structure that would act as a landmark without dominating surrounding buildings.

An 89m span network arch structure was chosen for the main river span, combining great strength and stiffness with a relatively low profile. A 100m long twin girder bridge was selected for the spans over the roadway. All parts of the viaduct are integrated visually to appear like a single ribbon of weathering steel.

This is the first network arch bridge to be built in the UK, and the first asymmetric (tapering) network arch anywhere in the world.

The preliminary design concept illustrated box girder structures throughout the length of the viaduct. The design was modified during the design-and-build phase, adopting box girders for the arch ribs but stiffened plate I-girders for the spans over the highway. This reduced construction costs and simplified future maintenance requirements.

The network arch is visually merged with the girder spans above Trinity Way by the inclusion of steel 'cascades' in between. These transition pieces negotiate complex changes in vertical and lateral geometry, and give the impression of a smooth transformation from the hexagonal box to the ribbed I-section.

The river and highway spans of the viaduct both employ steel primary girders, with steel cross girders supporting a composite concrete deck slab. The main span's hanger network comprises 2 x 46 solid steel hangers each 85mm in diameter.

Steel was the most cost-effective solution to satisfy the client's structural performance requirements and the desire for an elegant, iconic structure. Steel was ideal for the offsite manufacture of a highly geometrically complex structure and allowed an efficient construction methodology to be developed.

Adoption of weathering steel for the viaduct provides a unifying visual identity and minimises future maintenance requirements.

The network arch was the biggest structural challenge. An existing road bridge had to be demolished before construction could proceed. Steel support trestles were assembled by driving tubular steel piles through its deck, and they were used to prop the structure during demolition.

The supports served a dual role; they were then reused as the supports for the network arch span's during its erection.

The deck girders were installed piecemeal onto the abutments and temporary supports, welded together, and cross girders bolted in place. The arch sections were brought to site in segments and welded together lying on their sides near the river bank. Both arches were then rotated on end pivots to their correct inclination (6 degrees from vertical), overhead bracing installed, and temporary tie cables and struts inserted. The dual-arch assembly weighed nearly 600 tonnes and was erected onto the end nodes of the tie girders with a tandem crane lift using a 750-tonne crawler crane, along with the UK's largest 1 300-tonne crawler crane.

Hanger stressing was the most complex construction stage, with a total of 136 stages of stressing completed. Two independent load monitoring systems were used in every hanger during construction, with one monitoring system left in place for in-service structural health monitoring. Although the structure behaved generally as predicted, close cooperation was required between the construction and design teams to allow small divergences in hanger load to be corrected.

The box girder elements of the structure were specified as Execution Class 4, one step above normal UK bridgeworks requirements, due to the impossibility of future examination of welds within the highly constrained box sections.

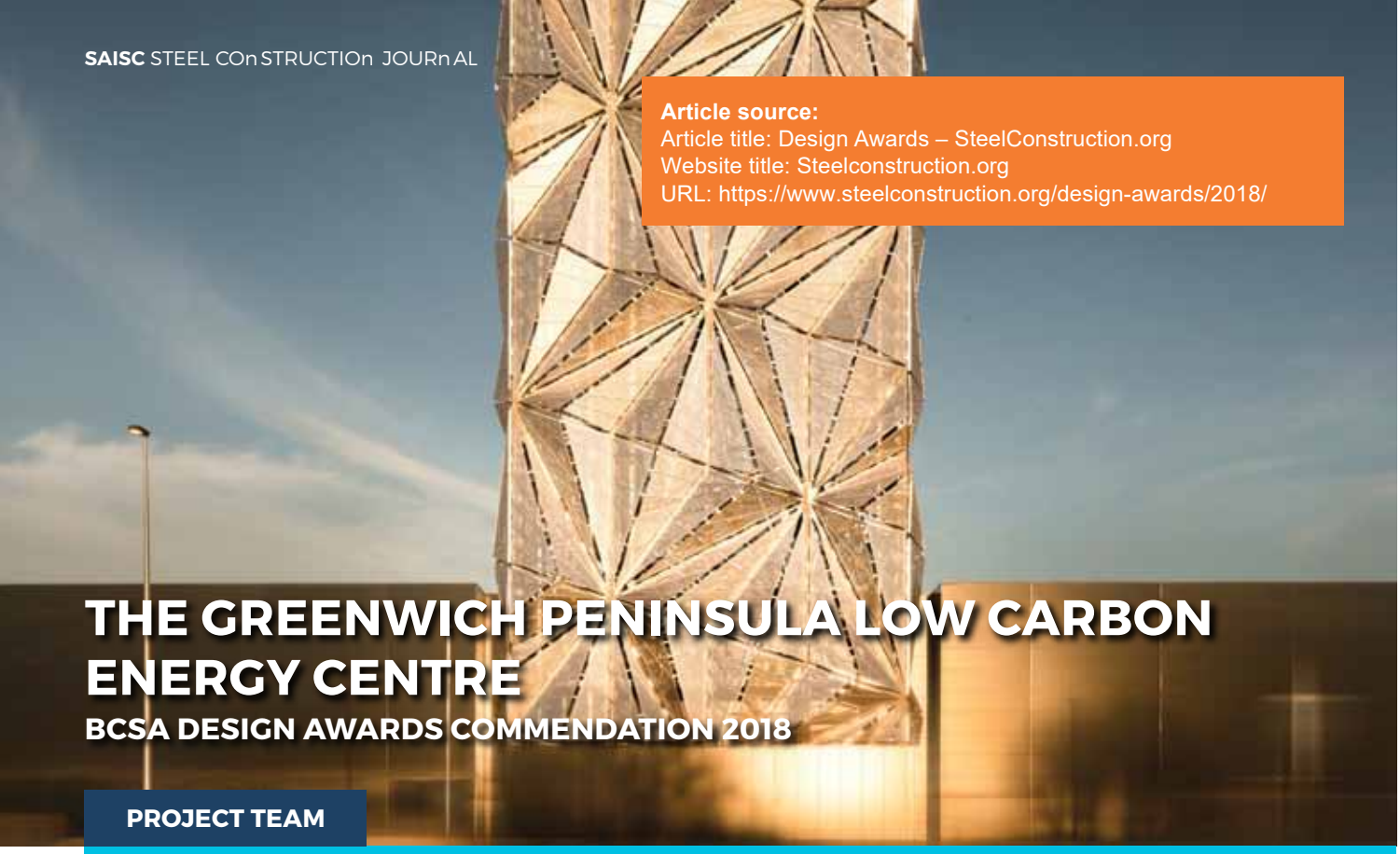
The bridge was fully designed and detailed using BIM, adopting a highly innovative arrangement to reduce programme, increase confidence in the buildability of the design, and allow early ordering of steel plate before the full design was complete. The steelwork contractor's BIM technicians were 'loaned' to the design engineers, embedded in their team, to help produce the BIM model, design drawings, and ensure the design data was simple for the steelwork contractor to re-use in its own processes. This approach is believed to be a first for the UK bridge industry.

Key parts of the design were delivered using a '3D-model-only' approach, minimising the cost and time required to produce conventional 2D structural steelwork design drawings, and improving confidence in the quality of the information shared.

Judges' Comment

The Ordsall Chord project is a major piece of new railway infrastructure that has a truly civic presence. The project combines a new network arch railway bridge and approach viaducts with integrated public realm. Weathering steel is used as a strong unifying element that flows through from the viaduct and bridge approach upstands into the main arches of the railway bridge, giving the scheme a strong architectural identity within its urban setting.

Image: Copyright – Matthew nicol Photography



Article source:
Article title: Design Awards – SteelConstruction.org
Website title: Steelconstruction.org
URL: https://www.steelconstruction.org/design-awards/2018/

THE GREENWICH PENINSULA LOW CARBON ENERGY CENTRE

BCSA DESIGN AWARDS COMMENDATION 2018

PROJECT TEAM

Architect – C. F. Møller I **Artist** – Conrad Shawcross RA I **Structural Engineer** – Price & Myers
Steelwork Contractor – Billington Structures Ltd I **Main Contractor** – Kier Group I **Client** – Knight Dragon

From conception the Energy Centre was developed with innovation and creativity to ensure the structure was a stand-out piece of artwork on the newly-forming Greenwich Peninsula.

Central in the structure is the highly distinctive flue tower, measuring 3m by 18m on plan and 49m tall.

The cladding of the flue tower unites sophisticated engineering and complex optic research to create an impressive sculptural concept on a huge scale. The unique cladding is formed of hundreds of triangular panels, each the height of a London bus, that fold and flow across the surface of the tower. The resulting complex geometric patterns visually break up the elevations to create an uneven sculpted surface that plays with the vanishing points and perspective.

The panels are perforated to exploit the phenomena of the Moiré Effect, and at night an integrated lighting design produces a shifting series of 'compositions' lit from within the structure.

The main building and tower are structurally independent to avoid the effects of cyclic loading and fatigue on the tower affecting the main building.

A series of wind tunnel tests were carried out on the tower structure as the cladding design progressed to assess the detailed loads on the structure and the dynamic sensitivity of the tower. A BRE study was also carried out to provide design data for assessing cyclical fatigue loads.

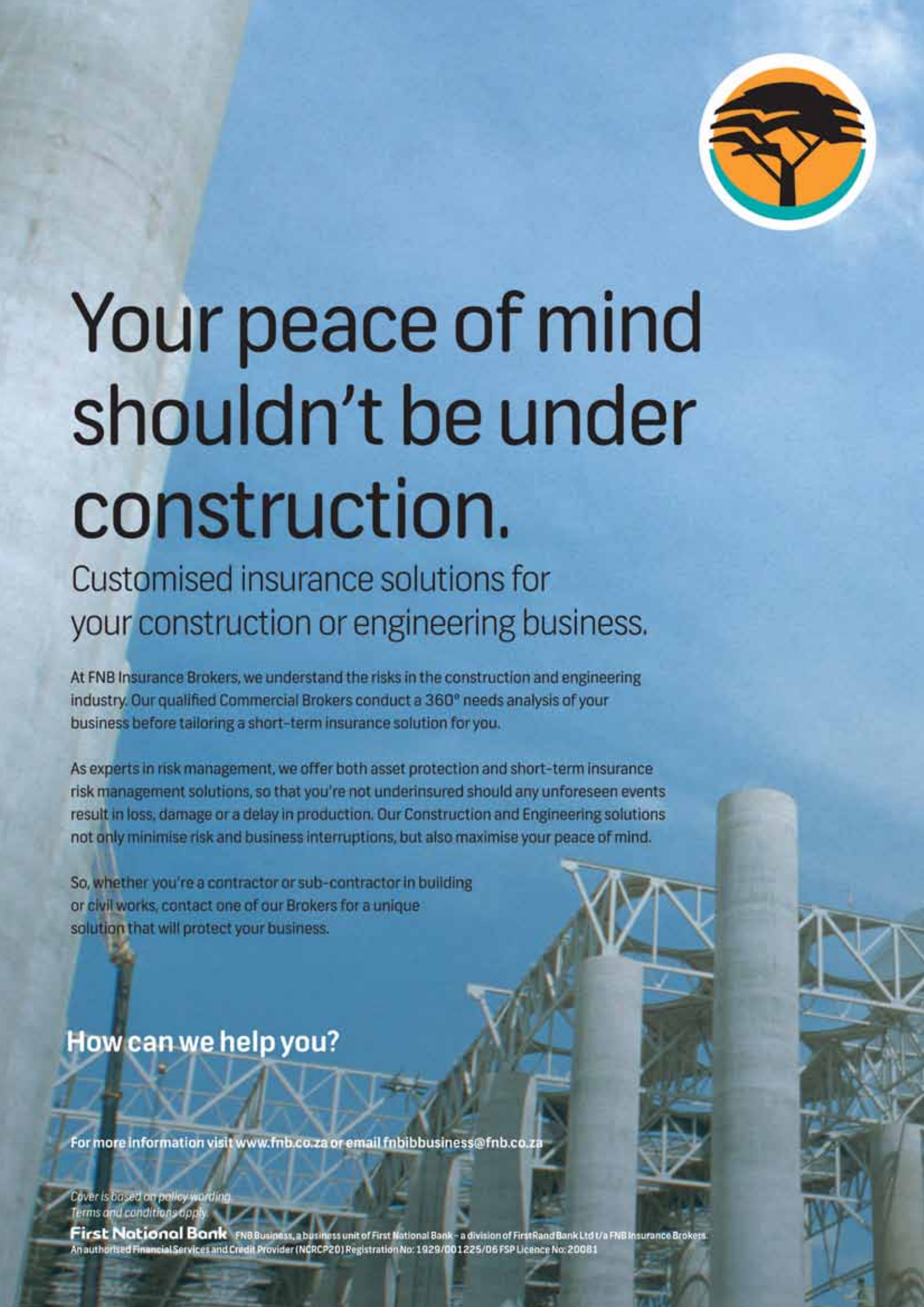
The tensile strength and ductility of steel made it the obvious choice to cope with the effects of high wind loading on the tall slim structure. The industrial aesthetic of steel lent itself to the historical context of Greenwich Peninsula, whilst the cross bracing of the structure echoes the neighbouring gas holder dating from 1886.

345 tonnes of galvanized steel were erected for the flue tower, which consisted of five main cantilever latticed girders, each formed from three 16m high by 3.15m wide sections spliced at third points on-site and placed 4.5m apart. These were connected with interleaving diagonal secondary members fixed to both chords on the main east and west façades.

Close coordination with the cladding sub- contractor was fundamental to achieving the correct setting out and detailing for the hundreds of fixing brackets; each fabricated as part of the steel frame with sufficient tolerance to allow seamless connection and adjustment of the cladding panels throughout the build.

Judges' Comment

This project forms the gateway to a new and rapidly developing quarter to the east of London and is a remarkable addition to the heavily urban landscape, both during the day and at night. Steel is used with grace and with flexibility for the future in mind. The collaboration between artist, designers, steelwork contractor and this enlightened client has resulted in a holistically coherent and notable project.



Your peace of mind shouldn't be under construction.

Customised insurance solutions for your construction or engineering business.

At FNB Insurance Brokers, we understand the risks in the construction and engineering industry. Our qualified Commercial Brokers conduct a 360° needs analysis of your business before tailoring a short-term insurance solution for you.

As experts in risk management, we offer both asset protection and short-term insurance risk management solutions, so that you're not underinsured should any unforeseen events result in loss, damage or a delay in production. Our Construction and Engineering solutions not only minimise risk and business interruptions, but also maximise your peace of mind.

So, whether you're a contractor or sub-contractor in building or civil works, contact one of our Brokers for a unique solution that will protect your business.

How can we help you?

For more information visit www.fnb.co.za or email fnbibbusiness@fnb.co.za

Cover is based on policy wording.
Terms and conditions apply.

Article Source: Bruneau (PEng, PhD), M. and A. Macrae (PhD), G. (2018 Rebuilding a City in Steel. *Modern Steel Construction*, (October 2018), pp.32-36.

A report on construction activity in Christchurch, New Zealand, following a devastating earthquake offers insights on how other cities might recover after potential similar events in the future—and why steel has become the material of choice for much of the city's repaired, rebuilt and new buildings.

REBUILDING A CITY IN STEEL

The ongoing revitalization of the Christchurch skyline following the devastating earthquake of 2011.

Michel Bruneau (top image) is a professor in the Department of Civil, Structural and Environmental Engineering at the University at Buffalo, N.Y., and **Gregory MacRae** (bottom image) is an associate professor in the Department of Civil and Natural Resources Engineering at the University of Canterbury in Christchurch, New Zealand.

For the past seven-odd years, Christchurch, New Zealand's, central business district (CBD) has been – and continues to be – a landscape of sprawling construction sites, with multiple new buildings being constructed, a few existing ones being repaired, some still in the process of being demolished and a number of damaged structures boarded up awaiting their fate.

This flurry of activity is the result of the magnitude 6.3 earthquake that occurred on February 22, 2011, at a depth of a little over three miles and a horizontal distance of less than six miles from the CBD. The earthquake turned the CBD into a "red zone" with severely restricted access for many months.

Anyone walking through the heart of the city can witness the hustle and bustle of the rebuilding activity taking place. However, to structural engineers – who can't miss the fact that a large number of structural systems are being used in the process – the predominance of structural steel over that landscape can be striking. Where reinforced concrete structures dominated the building inventory prior to the earthquake, the "new Christchurch" that is emerging is a city with a variety of structural forms. The structural steel systems being used are diverse, ranging from traditional systems like eccentrically braced frames (EBF) to structures with replaceable EBF links, buckling restrained brace frames (BRBF), friction connections, viscous dampers, rocking frames and base isolators – a dramatic departure from past practices.

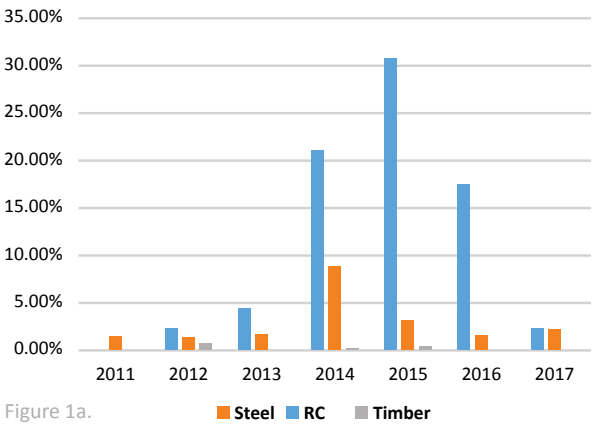


Figure 1a.

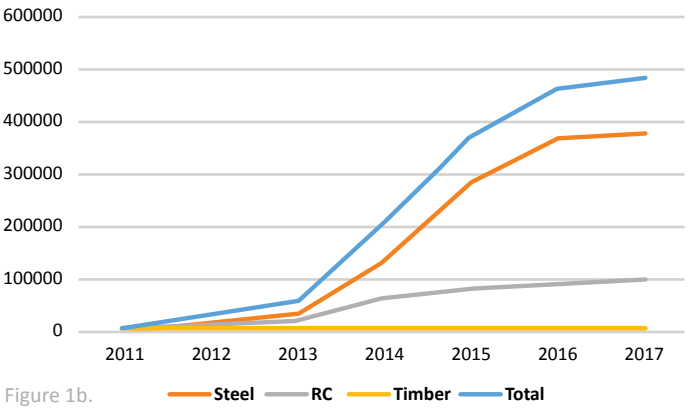


Figure 1b.

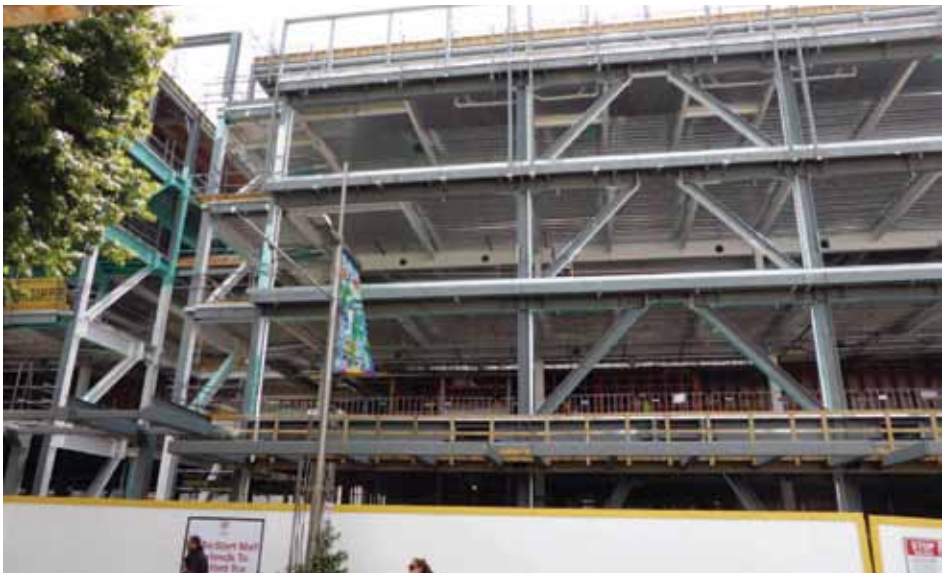
Why Steel?

But just how extensive is the shift in construction practice taking place in Christchurch – and, more importantly, what are the major factors that have driven decisions about structural materials and specific structural systems? To answer these questions, we conducted a series of interviews with the structural designers of more than 60% of the post-earthquake buildings constructed to date in Christchurch's CBD, as well as with a local architect, project manager and developer. Data was also collected from various sources, including Christchurch's City Council database, and quantitative information on structural forms and decision drivers has also been assembled. The interviews also provided a valuable overarching narrative on the reconstruction process that goes beyond the quantification process.

The findings from this study are presented in *Reconstructing Christchurch: A Seismic Shift in Building Structural System*, a 170-page report that can be downloaded for free from the Quake Centre's website (visit www.aisc.org/nzsteel). The information collected covers a total of 74 buildings, collectively adding to a total of 5 191 617 sq. ft of floor space. Results shows that as part of the reconstruction, structural steel has been used in the lateral force-resisting system (LFRS) of about half of the buildings. However, because this approach has been employed at a high rate in the larger structures, steel lateral force-resisting buildings account for 80% of the total square footage of all new construction encompassed in the study (as shown in *Figure 1*). Also, in buildings having a reinforced concrete LFRS, steel has been used for the gravity flooring system in about 75% of all cases. This results in approximately 95% of the total supported floor areas in new buildings relying on steel framing. *Figure 1* also presents information as a function of year of consent – i.e., year of building permit – showing trends over time as part of Christchurch's ongoing reconstruction activities. Note that results for 2017 are only for the first three months of the year, as data was collected and last interviews were conducted in March of that year.

Subdividing the data into the various types of LFRS, the following results were obtained, in terms of number of buildings, floor areas and percentage of the total floor area, as indicated in *Figure 1*:

- MRF = steel moment resisting frames (9.5), MFF = steel moment resisting frames with friction connections (1) and MRD = steel moment resisting frames with reduced beam sections ("dogbones") (4.5): 2 175 000 sq. ft (42%)
- BRB = buckling restrained braces (11): 1 195 000 sq. ft (23%)
- RCW = reinforced concrete walls (32.5): 865 500 sq. ft (17%)
- CBF = concentrically braced frames (3): 414 500 sq. ft (8%)
- EBF = eccentrically braced frames (2) and EBR = eccentrically braced frames with replaceable links (4): 296 000 sq. ft (6%)
- Other systems (such as rocking frames): 161 5000 sq. ft (4%)



An EBF with replaceable links (left) and a close-up of a link in an inverted-V braced frame (right).

Interestingly, the 11 base-isolated buildings (15% of the total number of buildings) alone provide a total 2 045 000 sq. ft, equivalent to 40% of the total floor area of the buildings considered in this study. This indicates that the base-isolated buildings have generally been large buildings. Indeed, the two largest base-isolated buildings alone, built specifically for public sector tenants, together add up to more 1 098 000 sq. ft (21% of the total floor area of the buildings considered). Note that the three largest buildings add up to 1 388 500 sq. ft (and 27% of the total floor area). A strong correlation was also observed between floor areas for base-isolated buildings and steel MRFs, although not exclusively.

To better understand the design trends, *Figure 2* shows results for all structures that have not been base-isolated, as it is interesting to identify which structural systems have been used more dominantly when buildings have not been base-isolated. Results, in terms of floor area indicated for each type of LFRS used, are as follows:

- BRB: 1 194 800 sq. ft (38%)
- RCW: 839 600 sq. ft (27%)
- MRF+MFF+MDF: 613 500 sq. ft (20%)
- EBF+EBR: 296 000 sq. ft (9.5%)
- CBF: 0 sq. ft (0%)
- Other: 169 000 sq. ft (5.5%)

In summary, 68% of all new non-base-isolated building area incorporates a steel LFRS.

Results from the qualitative part of the report indicate that the factors used to select specific structural systems are diverse and include costs, construction speed, perceptions of damage and structural performance, tenant requirements, local engineering culture and other factors. These are explained through the narratives obtained from the interviews. This critical part of the report (i.e., 75 of the total 170 pages) cannot be summarized without losing critical perspective of: the breadth of opinions; the reasons that sustained decisions;

A rocking frame system with energy-dissipating couplers between the frames.

and important nuances that impacted decisions from case to case. However, it can be drawn from this narrative that:

- Preventing loss of life is less frequently the most significant seismic performance objective for modern building
- The professional opinions of structural engineers drive the adoption of lowdamage systems, but tenant expectations have a significant direct or indirect impact on the choice of structural systems for individual buildings
- Context directly affects these decisions
- While the reconstruction experience has paralleled an increase in stakeholders' knowledge, government regulations would still be required if the objective was to achieve an across-the-board increase in seismic performance for all buildings in a community – something unforeseen to occur at this time

It is noteworthy that the report also contains an Appendix showcasing a number of case studies that were provided by consultants to provide project-specific information and illustrate the decisions that led to selection of the chosen structural systems.

It is significant that New Zealand's building codes and seismic design requirements are similar to those in North America and other developed countries, and that Christchurch's mix and vintage of construction types before the earthquake was similarly comparable. As such, the Christchurch experience may be unique today, but it is likely to repeat itself in other similarly developed urban centers worldwide and provides unique insight into some of the mechanisms that can dictate structural engineering decisions during the post-earthquake reconstruction of a modern city.

This work was supported by the Quake Centre, based at the University of Canterbury, and made possible by the contributions of many consultants, steel fabricators, contractors and other individuals (listed in the report) who have met with the authors and have generously shared their experiences of the Christchurch reconstruction process. This work also benefitted from the Christchurch City Council, which provided information on building consents from the city database, and Steel Construction New Zealand, which kindly shared information from its own database.

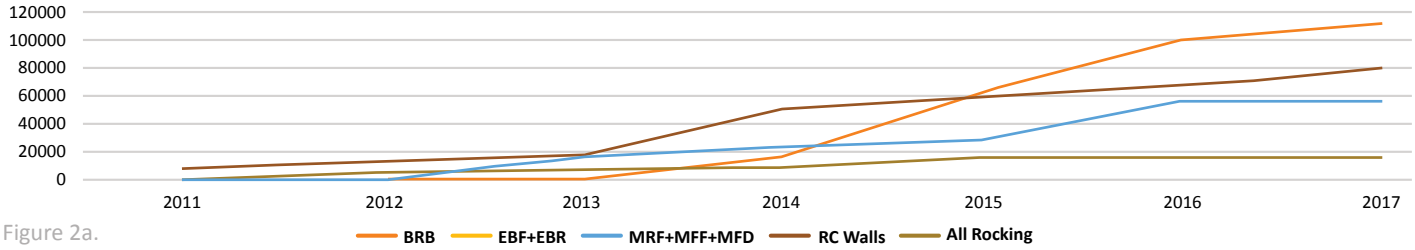


Figure 2a.

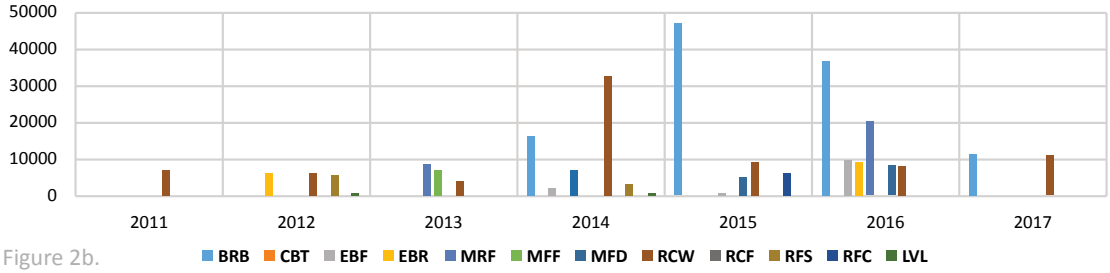


Figure 2b.

A BRB frame (left) and a column connection at mid-bay of the frame (right).

OPINION

AMANUEL GEBREMESKEL
TEChn ICAL DIRECTOR, SAISC

ADDInG VALUE **TO STEEL**

Global demand for steel has doubled over the past two decades. However this has not resulted in higher profitability for the steel industry. On the contrary 2018 saw the steel industry became the leading symbol of global trade wars and insecurity. Therein lies the fallacy of focusing on demand when evaluating the sustainability of our sector.

We must shift our efforts and focus away from increasing demand to adding value to steel. This requires collecting and utilizing information and knowledge about steel in ways that add value to this incredible material. This also creates an unprecedented opportunity for innovative people, who are close to the final user, to join the industry.

A structural steel beam that can be traced from its birth to its recycled new life has virtual value added to it. Quality as well as construction and payment schedules can be improved dramatically, and thus financial value added to the steel, if this traceability is available in a graphical database – say Building Information Model – to be used during procurement, fabrication, transportation and erection. Social and environmental value can be added to all this if the beam can be designed and used in such a way that it reduces emissions of CO_2 and wastage of fresh water.

According to the most recent Global Competitiveness Index South Africa is ranked 67th in the world. South Africa is particularly strong in three areas – financial system, market size and innovation capability – sitting 18th, 35th and 46th in the world respectively. This means the South African steel industry has access to the requisite financial resources, market size and technical capability to make the transition, and add tremendous value to steel.

The Institute continues to invest in such value addition initiatives. Research and development work on fire resistance of modular steel floor systems that do not require concrete – thus saving on weight, increasing safety, cutting construction time, CO_2 emissions and water usage – has received an impetus with a DTI THRIP grant this year.

Dr Richard Walls is leading a large number of students and academics at the University of Stellenbosch and Central University of Technology to carry out analytical work and full scale fire tests on such modular systems. In the process the Institute will help the country gain state of the art fire testing capabilities and the critical human capital that goes with it.

The social benefits are tremendous as this human capital is already being deployed to help reduce loss of precious life from fire spread in shack settlements.

This year we also collaborated with Hennie de Clercq and his Master's student Michael Drennan of Stellenbosch University to complete a comprehensive study on the cost of office building development. The study accounted for design, construction and financing costs of South African office buildings.

For the first time the study quantified the savings in financing and P&G costs due to the faster delivery of structural steel framed office buildings. Based on this knowledge we then gave courses to fabricators and design engineers

around the country on how to add value to structural steel in building construction.

In 2018 the Institute also supported Spencer Erling and Professor Alex Elvin to educate engineers on the cost implications of structural steel design decisions. The eToolkit, a steel connection design software, now includes connection costing modules. These modules are the first of their kind in the world.

Considering that between 30 and 50 percent of steel design, fabrication and erection costs lie in the end connections, this new feature of the eToolkit is expected to yield significant savings for our industry. Such savings add considerable value to each member, and thus increase the global competitiveness of the South African steel industry.

Various firms that we supported over the past year have yielded positive results. The innovation category of the 2018 Steel Awards showcased novel uses of steel to solve critical problems. For instance Genrec used smart design and fabrication to ship large modules to Kusile, thus cutting down the construction time on a severely delayed project.

Moreover young entrepreneurs at Aura Entle boasted an ingenious prop-less steel formwork, a first of its kind, which has the potential to replace rib&block, cast-in-place and even precast planks to deliver faster, safer and more cost effective floors in multi-story residential buildings.

We have even bigger plans to get involved with urban regeneration and development initiatives in 2019. We will explore where steel can play a leading role in solving urgent social problems. These include addressing housing, employment and fresh water shortages as well as reducing pollution and delays in project delivery.

We hope to find solutions while adding value to steel at the same time. We are convinced that we have access to the money, market size and enough innovative people to pull it off.

SASFA FEATURE

JOHN BARNARD
DIRECTOR, SASFA

ACTIVITIES AnD ACChIEVEMEnTS **DURING 2018**

SASFA's mission is to develop and grow the Southern African and export markets for light steel frame building.

LSFB has developed into a viable alternative building method for a range of low to medium rise buildings in South Africa during the past ten years. The steel consumption of this industry has grown to more than 16 000 t/yr of high strength galvanized steel sheet, as well as significant volumes of cladding and lining materials, fasteners and insulation. LSFB is increasingly being used in multi-storey office and commercial buildings, where it is replacing heavy masonry or reinforced concrete curtain walls.

The following is a brief summary of SASFA's activities and achievements during the past year.

Publicity

Growing the awareness of light steel frame building as an environmentally friendly and sustainable building method is one of SASFA's primary objectives. The target audiences range from the professions – engineers, architects and QS's – to builders, the building material supply chain, building authorities and financial institutions right down to prospective clients and home owners. The major promotional activities were:

- *Media articles:* Some 45 media articles were placed in 14 prominent publications to expand awareness of LSFB.
- *Steel Awards 2018:* 20 LSFB entries were received – 25% of the total

number of Award entries! The Gateway West building at Mall of Africa was selected by the judges as the winner of the Light Steel Frame Building category. Rancor received a special commendation for their focus on the residential market in Knysna pursuant to the devastating fires in 2017.

- A *quarterly informal newsletter* is sent to members to keep all informed about developments in industry.
- *SASFA's website* has been transferred to the SA Institute of Steel Construction, redesigned and is in the process of being upgraded.
- *Industry feedback meetings* were held in Johannesburg, Durban and Cape Town. It serves as an excellent forum for networking.
- Two cases of the unauthorised use of the SASFA logo were investigated and resolved.
- SASFA was invited by the organisers to do a presentation of LSFB at Interbuild.

Training

As part of the strategy to protect and enhance the quality of LSF buildings, SASFA offers a number of training courses, focusing on the designers, building contractors and building inspectors.

- The 6-day LSF training course for building contractors was presented in Alberton and Cape Town, to a total of 33 attendees. This brings the total number of people who have successfully completed the course to 425. Students hailed from Western Cape, Gauteng, OFS, KZN, and North West, illustrating the coutry wide interest in LSFB in South Africa.
- An annual lecture to University of Pretoria final year building science students was delivered to a group of some 60 students. We were also invited to lecture to a group of 100 architecture students, also at University of Pretoria.
- After a workshop held with the NHBRC in Franschhoek, it was decided to compile a training course aimed at building inspectors. This will assist in ensuring quality in LSF building projects.

Technical

- SASFA received three applications for system accreditation, from MiTek, Scottsdale and Framemaster. The assessment process is carried out in collaboration with the University of Pretoria.
- SASFA has been keeping its members up to date with the investigations carried out by the Australian NASH into the use of MgO – board.

Codes and standards

- SASFA is represented on the SABS committee SC98C, which is responsible for all standards dealing with steel in building and construction.
- A thorough revision of SANS 517 has been concluded, and the SABS's modifications are being checked.

Committees

SASFA's Exco, Technical and Training committees met on a two-monthly basis, involving 26 industry specialists from 18 member companies.

Quality monitoring

Several code compliance investigations were carried out on LSF buildings, on request.

Industry statistics

SASFA undertook its annual industry survey to quantify LSFB activity in South Africa. Demand for LSF declined slightly from the previous year, contrary to the (low) growth in buildings completed, reported by Statssa. Steel usage for roof structures showed slight growth, against a decline in complete buildings.

Membership, and finances
As one of the membership benefits, SASFA has referred numbers of project enquiries to members active in the specific areas. We received new membership applications from 7 companies, offset by 10 membership suspensions and two resignations.

SASFA's actual income during the past year was 16% below budget, reflecting the tough conditions in the market place. It was however more than offset by a 17% reduction in expenditures.

STEASA NEWS

KEITUMETSE MOUMAKOE (K.M)
DIRECTOR, STEASA

TRYInG An D ChALLEnGInG YEAR FOR THE STEEL TUBE AND PIPE INDUSTRY

The year 2018 like the years before has been a trying and challenging one for the steel tube and pipe industry as a whole, exacerbated on the domestic front by dwindling local demand and the constant influx of finished steel tube and pipe imports from Asia.

The export of steel tubes and pipes has encountered strong unabating headwinds in the global context when one considers the imposition of the USA's section 232, sanctioning a 25% tariff on carbon steel tube and pipe imports. The attempts by government at different forums i.e recent AGOA forum, to get SA exempt from section 232 have so far been fruitless and another great fear looms if section 232 is extended to AGOA agreements, which would have an adverse impact of SA's automotive exports. Practices of such trade protectionism by the USA has also prompted the likes of the EU to evaluate their "national security" regarding the trade of steel tubes and pipes and unfortunately when large trading blocs and countries are at loggerheads, emerging market nations like South Africa are collateral damage.

On a positive and progressive front, the ASTPM has over the past year been engaged with SARS over the introduction of an import reference price on certain steel tube and pipe HS code lines as a mechanism of halting the unjust practices of under-pricing/declaration, incorrect identification of products among others. The import reference price was officially instituted by SARS on 1st August 2018 and has thus far yielded great results. Associations such as SAMCRA and SAWA have also successfully had their product related import reference prices activated by SARS.

STEASA has taken a proactive approach to addressing export challenges which the industry is acutely aware off. Even with the current impediments to competitive exports, STEASA has been engaging with Trade Advisory, a specialised division of the University of NW Potchefstroom Campus, who have developed a Trade Export Decision Support Model (DSM) that helps companies to identify realistic export opportunities. TRADE-DSM (Decision Support Model) which is an analytical tool that identifies realistic export opportunities for both export-ready and active exporting companies that wish to expand their sales reach into foreign markets. Part of the value in the TRADE-DSM lies in its ability to offer alternatives to exporters that are facing saturation and/or declining growth in their traditional markets.

Overall we have worked well with industry stakeholders and government stakeholders, the likes of the metals desk at dti, ITAC, Trade Investment Africa (TIA), Trade Investment South Africa (TISA), Gauteng Growth development Agency (GGDA) among others, in addressing our most salient and on going efforts regarding tariffs for the midstream and downstream, designation, export competitiveness, demand creation for the capacity for steel tubes and pipes, promoting concrete filled tubular columns and addressing standards and codes.

CONNECT WITH STEASA: **Contact:** Keitumetse Moumakoe (K.M) **Email:** keitumetse@steasa.com **Web:** www.steasa.com

SAMCRA FEATURE

DENNIS WHITE
DIRECTOR, SAMCRA

An INDUSTRY **FIGHTING FOR SURVIVAL**

The current year is proving to be even more difficult than the previous two years. We estimate the cladding sector has contracted some 20% since 2016.

Unfortunately imports of coil continued to increase until the end of July. In August there was a reversal, the total imports YOY declined by 4%. Imports of galvanised coil declined 10%, 55% Aluminium/Zinc alloy 0% but colour-coated has increased 29% following a 7 100t shipment ex Indonesia in August. Imports of profiled products have been declining since April and were 19% down YOY to August. The increase in colour-coated coil is cause for concern as we are aware of a number of profilers importing coil with a Z100/Z60 substrate. The colour coating exhibits severe fading within two years. This material is being supplied mainly to truss plants and builders but is now beginning to appear in other sectors.

Our engagement with the DTI and SARS relating to the under valuing of imported corrugated products resulted in SARS implementing 'risk tools' into their system whereby any goods arriving with a F.O.B. rate below an agreed benchmark are impounded for investigation. Benchmark rates will be reviewed quarterly. A similar engagement including SAISI is addressing the need for a duty on so called coated boron alloy steel and the circumvention of duties by the use of the 'Other' categories in the Customs and Excise tariff codes.

The DTI has issued notice of their intention to commence a review of the National Building Regulations via SABS TC 60 of which SAMCRA is a member. The National Regulator for Compulsory Specifications has received a request from a major retailer to arrange a meeting with TC 60 regarding the sale of non-compliant building products.

Regrettably conditions at the SABS are at a low point with a large turnover of staff plus critical shortages of technical personnel resulting in a virtual standstill with the development and processing of standards. Hopefully the revised version of SANS 10400-L Roofs will be published by December. We are still awaiting approval from the Standards Committee to release the drafts for the cladding and fastener standards to the editors who in turn will release them for public comment. We are trying every means available to expedite this process.

Requests for our consulting services continue to increase and range from disgruntled homeowners through insurance assessors to property developers and professionals. We continue to participate in CPD presentations and lectures to final year architectural students. In the New Year we intend offering lectures to other faculties in the Built Environment. We are also preceding with workshops for professionals and the drafting of training workshops for contractors.

We regularly encounter professionals involved with government projects who are unaware of the requirements pertaining to designation and have introduced the subject as part of our workshops and presentations.

Regarding the establishment of testing facilities we have had preliminary discussions with E-Enterprises which is the business arm for the University of Pretoria.

Our website remains popular (over 1 400 visits/month) and we are in the process of an upgrade which will provide direct links to members' websites. We continue to publish articles on a monthly basis in Steelspeak and other national publications.

Membership remains our greatest challenge.

CONNECT WITH SAMCRA: Contact: Dennis White Email: dennis@saisc.co.za Web: www.samcra.co.za

POLASA NEWS

KOBUS DE BEER
DIRECTOR, POLASA

2018 –**YEAR IN REVIEW**

The Association was formed as an independent sub-association of the SAISC (Southern African Institute of Steel Construction) during 2013. Five years ago the "burning platform" was the lack of work and the lack of continuity of work placed with industry. Today the South African local transmission line industry finds itself in extremely choppy waters. No new high voltage transmission line projects have been launched into the market since late 2016.

The local South African transmission industry, having largely delivered on Eskom's projects, finds itself in distress, experiencing significant job and capacity losses through business down-scaling, distress or business exits from the sector.

In 2015 Eskom launched some 2 200km of transmission line enquiries to market. Despite the intensely difficult operating conditions, the local industry has risen to Eskom's needs. To date, of the 1 300km of this tranche of work which is completed, 92% or about 1 200km has been built by local companies. Of Eskom's Shareholder Compact kilometers, local industry delivered 95% in 2016/2017 and 100% in 2017/2018. During this period overseas contractors failed spectacularly with major contracts having to be cancelled due to non-performance.

In the last twelve months incubatee contractors are in severe business distress and face the real prospect of business failure.

The terms of reference and purposes of the association

Membership of the Powerline Construction Association is open to all approved contractors for and suppliers of ESKOM's transmission and distribution line requirements. POLASA is managed by an elected Board of Directors from the industry, each focusing on specific areas of relevance.

Key short-term focus areas of POLASA:

- Preservation of existing jobs and skills in the industry in line with Government aspirations for job creation;
- Protection and preservation of the local industry by driving localisation in the face of dumped product (whether through price or sub-standard supply);
- Safety within the industry; and
- Training to address the skills shortage and age profile within the industry.

POLASA seeks to engage with its client at a proposed PDP Indaba to flesh out the risks to sustainability of the industry to deliver on the critical transmission line infrastructure and seek solutions to avoid the cyclic nature of work that leads to inevitable job losses.

POLASA actively seeks to add value to ESKOM's actions and requirements by creating platforms to facilitate high level bilateral discussions between ESKOM and industry.

The Association fully supports healthy competition between entities but endeavours to resolve issues that restrict the industry from performing at optimum levels of productivity, quality and safety. Strict compliance with anti-competitive legislation is maintained.

Designation

POLASA was instrumental in providing supporting evidence for the Treasury to formally instruct that many products be formally "designated" i.e. that these products must be fully locally made in South Africa, including the supply of all steel requirements:

- Steel power pylons – 100%
- Monopole Pylons – 100%
- Steel substation structures – 100%
- Street lighting steel poles – 100%
- Steel lattice towers & masts – 100%
- Power line hardware – 100%
- Structural steel for power stations – 100%

POLASA is actively supporting ESKOM in implementing the above, particularly regarding buying practises in the various districts and remote locations. All POLASA members are being encouraged to use the opportunity to develop more productive and cost effective facilities and to actively pursue export markets.

CONNECT WITH POLASA: Contact: Kobus De Beer **Email:** kobus@saisc.co.za **Web:** www.polasa.co.za

Th E GOOD

UPDATES FROM OUR TEAM, OUR MEMBERS An D Th E BROADER COn STRUCTIOn In DUSTRY

n EWS

STEEL AWARDS 2018

TELL US YOUR GOOD NEWS!

Let us know what you're celebrating as a company, or what you're proud of that we can share with the industry! **Email denise@saisc.co.za**

SAISC'S NATIONAL ANNUAL AWARDS CEREMONY took place on 11 October 2018 at Emperor's Palace (Jhb), Uskaka Marine World (KZn) and Crystal Towers (CPT). A combined total of over 910 guests attended this prestigious event where they were reminded about the great work our industry produces.

Congratulations to the winning projects, which can be viewed on the SAISC's YouTube page: http://bit.ly/2018WinnersSA

The Steel Awards 2018 winning projects were:

Time Square Sun Arena – Overall Winner, ASTPM Tubular Category Winner and Commercial Category Winner

Discovery Head Office – Architectural Category Winner

Shoprite Checkers Cilmor Distribution Centre – Safintra Factory and Warehouse Category Winner, and Global Roofing Solutions metal Cladding Category

House Matthews – Residential Category Winner

Rissik Street Post Office – Safal Steel Innovation Category Winner

Gateway West, Mall of Africa – Light Steel Frame Building Category Winner

Our generous sponsors make this event possible, so we would like to extend a big thank you to:

Pro Roof Steel and Tube – Main Sponsor of Steel Awards Gauteng

Aveng Trident Steel – Main Sponsor of Steel Awards Western Cape, and national Beverage Sponsor

ArcelorMittal South Africa – Digital Trailblazer Sponsor

Cadex Systems South Africa – Photo Competition Sponsor

Global Roofing Solutions – Metal Cladding Category Sponsor

Safintra South Africa – Factory and Warehouse Category Sponsor

Safal Steel – Innovation Category Sponsor

ASTPM – Tubular Category Sponsor

NJR Steel – Partner Sponsor

Stewarts and Lloyds – Partner Sponsor

Macsteel – Partner Sponsor

KRU Detailing – Gauteng Photo Booth Sponsor

GAUTeNG, empeRORS pALACe

KWAzULU-NATAL, USHAKA mARiNe WORLD

WeSTeRN CApe, CRySTAL TOWeRS mARRiOT hOTeL

SAiSC memBeRS

STEEL PRODUCERS

ArcelorMittal South Africa
Representative: Mohamed Adam
Tel +27 16 889 9111
Mohamed.Adam@arcelormittal.com
www.arcelormittal.com

Cape Gate
Representative: Martin Friedman
Tel: +27 16 980 2121
friedmnm@capegate.co.za
www.capegate.co.za

Columbus Stainless (Pty) Ltd
Representative: Lucien Matthews
Tel: +27 13 247 2805
matthews.lucien@columbus.co.za
www.columbus.co.za

Scaw South Africa (Pty) Ltd
Representative: Dudu Ndlovu
Tel: +27 11 621 1524
d.ndlovu@scaw.co.za
www.scaw.co.za

UNICA Iron & Steel (Pty) Ltd
Representative: Ravin Singh
Tel: +27 12 719 9736
ravin@unica.co.za
www.unica.co.za

STEELWORK CONTRACTORS

Eastern Cape

Industrial Services Group
Representative: Errol Thomson
Tel: +27 43 707-2700
ethomson@isgeng.co.za
www.isgeng.co.za

Uitenhage Super Steel cc
Representative: Ginkel Venter
Tel: +27 41 922 8060
ginkel@uss.co.za

Gauteng

African Steel & Associated Projects
Representative: Colin Wilson
Tel: + 263 4 621584
ops@thesteelbuildingco.co.zw
www.agristructures.co.zw

Betterect (Pty) Ltd
Representative: Nicolette Skjoldhammer
Tel: +27 11 762 5203
nicolette@betterect.co.za
www.betterect.co.za

Cadcon (Pty) Ltd
Representative: Richard Butler
Tel: +27 12 664 6140
richbutler@cadcon.co.za
www.cadcon.co.za

Central Welding Works
Representative: Stephen Horwitz
Tel: +27 12 327 1718
stephen@cwwpta.co.za

Ferro Eleganza (Pty) Ltd
Representative: Chris Narbonese
Tel: +27 12 803 8035
admin@ferroe.co.za
www.ferroe.co.za

Energy Fabrication (Pty) Ltd
t/a Genrec Engineering
Representative: Sicelo Buthelezi
Tel: +27 11 876 2309
sicelo.buthelezi@genrec.co.za
www.genreceng.co.za

IVMA Engineering cc
Representative: Mauro Munaretto
Tel: +27 11 814 3124
ivma@ivma.co.za
www.ivma.co.za

Khombanani Steel (Pty) Ltd
Representative: Marten Spencer
Tel: +27 11 975 0647
marten@tasseng.co.za

Louwill Engineering (Pty) Ltd
Representative: Juan Sliep
Tel: +27 11 818 5186
juan@louwill.co.za
www.louwill.co.za

Magnet Engineering (Pty) Ltd
Representative: Diniz Belo
Tel: +27 11 908 3500
magnetgr@global.co.za
www.magnetengineering.co.za

MPW Steel Construction (Pty) Ltd
Representative: Nic Tallarico
Tel: +27 11 450 3380
nic@mpwtalmac.co.za
www.mpwtalmac.co.za

Nancy Engineering
Representative: Ricardo Adriano
Tel: +27 11 493 1585
nanceng@mweb.co.za

NJW Engineering Services cc
Representative: Nick Van Deventer
Tel: +27 12 541 3931
nick@njw.co.za

SE Steel Fabrication (Pty) Ltd
Representative: David J Essey
Tel: +27 11 953 4584
sesteel@icon.co.za

Sectional Poles (Pty) Ltd
Representative: Phil M Koen
Tel: +27 12 348 8660
pkoen@sectionalpoles.co.za
www.sectionalpoles.co.za

SMEI Projects (Pty) Ltd
Representative: Sandy Pratt
Tel: +27 11 914 4101
afpratt@smei.co.za
www.smei.co.za

Spiral Engineering cc
Representative: Colin Kirkland
Tel: +27 11 474 9119
colin@spiralengineering.co.za
www.spiralengineering.co.za

Steel Band Construction cc
Representative: Steven Smit
Tel: +27 11 425 4569
steelband@icon.co.za
www.steelbandconstruction.co.za

Tass Engineering (Pty) Ltd
Representative: Tim Tasioulas
Tel: +27 11 975 0647
tim@tasseng.co.za
www.tass.co.za

Trentbridge Engineering cc
Representative: David Hunter
Tel: +27 16 365 5327
trentfab@intekom.co.za

Tudor Engineering & Draughting cc
Representative: Braam Beukes
Tel: +27 11 914 5163
tudora@mweb.co.za

Viva Engineering (Pty) Ltd
Representative: Collen Gibbs
Tel: +27 11 392 3926
colleng@vivaeng.co.za
www.vivaeng.co.za

WBHO Services North
Representative: Andrew Breckenridge
Tel: +27 11 265 4000
andrewb@wbho.co.za
www.wbho.co.za

KwaZulu-Natal

Avellini Bros (Pty) Ltd
Representative: Pietro Avellini
Tel: +27 31 464 0421
ravellini@iafrica.com

DAVGO cc
Representative: Bryce Goss
Tel: +27 31 765 2994
bryce@davgo.co.za
www.davgo.co.za

Churchyard & Umpleby
Representative: Keith Ball
Tel: +27 31 701 0587
keith@candu.co.za
www.candu.co.za

Cousins Steel International (Pty) Ltd
Representative: Adam Oldfield
Tel: +27 31 312 0992
adam@cousinssteel.co.za
www.cousinssteel.co.za

Impact Engineering cc
Representative: Douglas Nidd
Tel: +27 32 947 1054
impact@saol.com
www.impacteng.co.za

Ogilvie Engineering (Pty) Ltd
Representative: Allan Olive
Tel: +27 31 736 1643
allan@ogilvieengineering.co.za

Rebcon Engineering (Pty) Ltd
Representative: Warren Butler
Tel: +27 31 705 5851
warren@rebcon.co.za
www.rebcon.co.za

SpanAfrica Steel Structures (Pty) Ltd
Representative: James Pinnell
Tel: +27 33 346 2555
jamesp@spanafrica.co.za

Steelkon Projects
Representative: Konrad Karcz
Tel: +27 82 971 5916
konrad@steelkon.co.za
www.steelkon.co.za

Mpumalanga

B & T Steel
Representative: Bryan Wilken
Tel: +27 13 665 1914
marketing@btsteel.co.za
www.btsteel.co.za

Da Costa Construction Welding cc
Representative: Tobie Oosthuizen
Tel: +27 17 647 1130
tobie@dcconstruction.co.za

GPM Services
Representative: Wessel Venter
Tel: +27 71 697 5802 / 82 452 9306
wessel@gpms.co.za
www.gpms.co.za

Tubular Holdings (Pty) Ltd
Representative: Mike Lomas
Tel: +27 11 553 2012
mlomas@tubular.co.za
www.tubular.co.za

Steel Services and Allied Industries
Representative: Lawrence Bartlett
Tel: +27 18 788 6652/3
lawrenceb@steelservices.co.za
www.steelservices.co.za

North West

Tetra Con (Pty) Ltd
Representative: Kappie Kleinsmit
Tel: +27 14 538 0050
kappie@tetracon.co.za

Western Cape

Inenzo Water (Pty) Ltd
Representative: Jan Cloete
Tel: +27 21 948 6208
admin@inenzo.com
www.inenzo.com

Mazor Steel cc
Representative: Shlomo Mazor
Tel: +27 21 556 1555
judy@mazor.co.za
www.mazor.co.za

Prokon Services (Pty) Ltd
Representative: Martin Lotz
Tel: +27 21 905 4448
martin@prokonservices.co.za
www.prokonservices.co.za

Union Structural Engineering Works
Representative:
Mike N Papanicolaou
Tel: +27 21 534 2251
michael@unionsteel.co.za
www.unionsteel.co.za

STEEL MERCHANTS AND SERVICE CENTRES

Gauteng

Allied Steelrode (Pty) Ltd
Representative: Justin Dax Cloete
Tel: +27 10 216 0189
justinc@alliedsteelrode.co.za
www.alliedsteelrode.com

Aveng Trident Steel
A division of Aveng Africa (Pty) Ltd
Representative: Eileen Pretorius
Tel: +27 11 861 7102
eileen.pretorius@trident.co.za
www.avengtridentsteel.co.za

Macsteel Service Centres SA (Pty) Ltd
Representative: Granville Rolfe
Tel: +27 11 871 4677
granville.rolfe@mactrading.co.za
www.macsteel.co.za

Macsteel VRN
Representative: Jimmy Muir
Tel: +27 11 861 5200
jimmy.muir@vrn.co.za
www.vrnsteel.co.za

NJR Steel Services (Pty) Ltd
Representative: Greg Mollett
Tel: +27 11 477 5515
gmollett@njrsteel.co.za
www.njrsteel.co.za

SSAB SA (Pty) Ltd
Representative: Raymond Rautenbach
Tel: +27 11 724 5046
Raymond.Rautenbach@ssab.com
www.ssab.com

Stewarts & Lloyds Holdings (Pty) Ltd
Representative: Mandy de Lange
Tel: +27 11 553 8500
mandyd@sltrading.co.za
www.stewartsandlloyds.co.za

TW Profile Services (Pty) Ltd
Representative: Leon Coetzee
Tel: +27 894 3031
leonc@twprofile.co.za
www.twprofile.co.za

KwaZulu-Natal

BSi Steel (Pty) Ltd
Representative: Keith Whiting
Tel: +27 11 861 7611
keith.whiting@bsisteel.com
www.bsisteel.com

Macsteel Trading Durban
Representative: Marcus Nel
Tel: +27 31 913 2600
marcus.nel@mactrading.co.za

Western Cape

Macsteel Trading Cape Town
Representative: Maria Francis
Tel: +27 21 950 5506
maria.francis@mactrading.co.za

Transcape Steels (Pty) Ltd
Representative: James van Rooyen
Tel: +27 21 534 3211
jamesvr@transcape.co.za
www.transcapesteels.co.za

STEEL PRODUCT MANUFACTURERS

Almec Manufacturing cc
Representative: Joan Basson
Tel: +27 18 469 3202
joanalmec@gds.co.za
www.almecmanufacturing.co.za

Amanzi Storage Solutions (Pty) Ltd
Representative: Duane Ramos
Tel: +27 11 493 1197
duane@amanziss.co.za

AQUADAM (Pty) Ltd
Representative: Willie Palm
Tel: +27 12 810 0940
willie@aquadam.co.za
www.aquadam.co.za

Augusta Steel (Pty) Ltd
Representative: Nico Erasmus
Tel: +27 11 914 4628
nico@augustasteel.co.za
www.augustasteel.co.za

Capital Star Steel SA
Representative: Pierre Willemse
Tel: +27 12 347 5595
pwillemse@capitalstarsteel.co.za
www.capitalstarsteel.co.za

Ficep SpA
Representative: Nick Blackwell
Tel: +39 0332 876 111
nick.blackwell@ficep.it
marketing@ficep.it
www.ficepgroup.com

George Stott & Co (Pty) Ltd
Representative: Johan Venter
Tel: +27 11 474 9150
johanv@geostott.co.za
www.geostott.co.za

Grating World (Pty) Ltd
Representative: Dean Charsley
Tel: +27 11 452 1150
dean@styria.co.za
www.gratingworld.co.za

Mentis Sales
Representative: Dean Weil
Tel +27 11 255 3200
deanw@mentis.co.za
www.mentis.co.za

Project Materials Southern Africa (Pty) Ltd
Representative: Neil Myburgh
Tel: +27 11 465 4247
Tel: +27 79 898 2086
neil.myburgh@pmpiping.com

Robor (Pty) Ltd
Representative: Glen Nolan
Tel: +27 11 971 1600
glenn@robor.co.za
www.robor.co.za

Rufco Engineering
Representative: Gandeloro Ruffini
Tel: +27 53 313 1651
info@rufco.co.za
www.rufco.co.za

SBS Water Systems (Pty) Ltd
Representative: Hlengiwe Matiwane
Tel: +27 31 716 1820
hlengiwe@sbsmarketing.co.za
www.sbsgroup.co.za

Swasap (Pty) Ltd
Representative: Derek Anderson
Tel: +27 11 873 6666
derek@swasap.com
www.swasap.co.za

Vital Engineering & Angus Mcleod (Pty) Ltd
Representative: Dodds B Pringle
Tel: +27 11 898 8500
dodds@gratings.co.za
www.gratings.co.za

Void Pro Manufacturing (Pty) Ltd
Representative: Andries Botha
Tel: 0861 106 275
info@voidcon.co.za
www.voidcon.co.za

CORROSION AND FIRE PROTECTION TO STEEL

ARMCO Superlite (Pty)Ltd
Representative: Anthonie de Wit
Tel: +27 11 974 8511
dewit.anthonie@armco.co.za
www.armco.co.za

Corrosion Institute of Southern Africa
Representative: Donovan Slade
Tel: +27 10 224 0761
president@corrisa.org.za
www.corrisa.org.za

Hot Dip Galvanizers Association Southern Africa
Representative: Robin Clarke
Tel: +27 11 456 7960
hdgasa@icon.co.za
www.hdgasa.org.za

Pyro-Cote cc
Representative: Trevor Miller
Tel: +27 11 864 5205
pyrocotejhb@pyrocote.co.za
www.pyrocote.co.za

CRANES

RGM Cranes
Representative: Ian O'Hara
Tel: +27 11 422 3690
ian@rgm.co.za
www.rgmcranes.com

CONSULTING ENGINEERS, DETAILERS AND PROJECT MANAGERS

Gauteng

AECOM SA (Pty) Ltd
Representative: Lara Lombard
Tel: +27 12 421 3832
Lara.Lombard@aecom.com
www.aecom.co.za

Anglo Operations Ltd
Representative: Kurt Waelbers
Tel: +27 11 638 9111
kurt.waelbers@angloamerican.com
www.angloamerican.com

Aurecon South Africa (Pty) Ltd
Representative: OJ Ajayi
Tel: +27 11 305 0300
OJ.Ajayi@aurecongroup.com
www.aurecongroup.com

Arup (Pty) Ltd
Representative: Kimon Comninos
Tel: +27 11 218 7739
kimon.comninos@arup.com
www.arup.com

Bigen Africa Services (Pty) Ltd
Representative: Daneel Strydom
Tel: +27 12 842 8840
daneel.strydom@bigenafrica.com
www.bigenafrica.com

Blue Bear Detailing Projects
Representative: Barry De Beer
Tel: +27 72 038 7870
Tel: +27 83 296 7408
barry@bluebeargroup.com

Clearspan Structures (Pty) Ltd
Representative: Jeff Montjoie
Tel: +27 11 823 2402
jmo@clearspan.co.za
www.clearspan.co.za

Consultaurie Design (Pty) Ltd
Representative: Mark Phillips
Tel: +27 11 234 6787
mark@ctauri.com

DRA Projects (Pty) Ltd
Representative: Ryan Males
Tel: +27 11 086 2325
ryan.males@draglobal.com
www.draglobal.com

EDS Engineering Design Services (Pty) Ltd
Representative: Hergen Fekken
Tel: +27 12 991 1205
hergen@edseng.co.za
www.edseng.co.za

Fluor South Africa (Pty) Ltd
Representative: Colin Morris
Tel: +27 11 519 6000
colin.morris@fluor.com
www.fluor.com

Hatch Africa (Pty) Ltd
Representative: Morne Fourie
Tel: +27 11 239 5422
morne.fourie@hatch.com
www.hatch.com

Imbabala Contractors
Representative: Michael Mamotte
Tel: +27 11 902 2952
mikem@imbacontra.co.za
www.imbacontra.co.za

International Drafting Services (Pty) Ltd
Representative: Frans Vivier
Tel: +27 11 472 4466
frans@idrafting.co.za

KRU Detailing cc
Representative: Johann Strauss
Tel: +27 11 462 8296
johann@kru.co.za

Malani Padayachee and Associates (Pty) Ltd
(shortened version MPA (Pty) Ltd)
Representative: Malani Padayachee-Saman
Tel: +27 11 781 9710
admin@mpaconsulting.co.za
www.mpaconsulting.co.za

Pollock Williams James & Partners cc
Representative: Tim James
Tel: +27 11 679 2282
pwp@iafrica.com

Roytec Global (Pty) Ltd
Representative: Bjorn Leistner
Tel: +27 11 608 0000
Bjorn.Leistner@roytec.co.za
www.roytec.co.za

Tenova TAKRAF Africa
Representative: Leon Olwage
Tel: +27 11 201 2542
leon.olwage@tenova.com
www.takraf.com

VLE Draughting (Pty) Ltd
Representative: Benandi Page
Tel: +27 65 876 8840
benandi@vledraughting.co.za
www.vledraughting.co.za

WorleyParsons RSA
Representative: Ian Robinson
Tel: +27 11 218 3000
ian.robinson@worleyparsons.com
www.worleyparsons.com

WSP Group Africa (Pty) Ltd
Representative: John Truter
Tel: +27 11 300 6000
john.truter@wspgroup.co.za
www.wspgroup.co.za

KwaZulu-Natal

DMV Richards Bay (Pty) Ltd
Representative: Le Roux Fourie
Tel: +27 35 789 1828
admin@dmvrb.co.za

Gavin R Brown & Associates
Representative: Gavin R Brown
Tel: +27 31 202 5703
gavbrown@global.co.za
www.gavbrown.co.za

SDN Drawing Services cc
Representative: Sagren Govender
Tel: +27 31 464 8186
sdndrawings@gmail.com

Young & Satharia Structural & Civil Engineering
Representative: Rob Young
Tel: +27 31 207 7252
rob@yands.co.za
www.yands.co.za

Mpumalanga

Bulkcon cc
Representative: Desmond Enslin
Tel: +27 17 811 7520
desmond@bulkcon.co.za
www.bulkcon.co.za

Ijubane Projects (Pty) Ltd
Representative: Willie Greyling
Tel: +27 13 243 4390
willie@glps.co.za
www.glps.co.za

J.A.M.S. Geological Services cc
Representative: Pieter Vermeulen
Tel: +27 17 632 2990
pieter.vermeulen130969@gmail.com

Lategan Bouwer Civil & Structural Engineers
Representative: Anton Van Dyk
Tel: +27 17 634 4150
avandyk@latbou.co.za
www.latbou.co.za

Western Cape

By Design Consulting Engineers
Representative: Barend Oosthuizen
Tel: +27 83 287 1995
barend@bydesign.org.za
www.bydesign.org.za

Kantey & Templer (Pty) Ltd
Representative: Chris Von Geusau
Tel: +27 21 405-9600
chrisvg@kanteys.co.za
www.kanteys.co.za

KLS Structural (Pty) Ltd
Representative: Gerrit Steyn
Tel: +27 21 948 0900
gerrit@kls.co.za
www.kls.co.za

Mondo Cane cc
Representative: Rob Chalmers
Tel: +27 21 852 2447
rob@mondocane.co.za
www.mondocane.co.za

SMEC South Africa (Pty) Ltd
Representative: John Anderson
Tel: +27 21 417 2900
john.anderson@smec.com
www.smec.com

International

Walsh Draughting Services
Representative: Donal Walsh
Tel: 00 353 57 8624913
walshds@eircom.net
www.walshds.ie

CIVIL ENGR CONTRACTORS

Maccaferri SA (Pty) Ltd
Representative: Adriano Gilli
Tel: 087 742 2710
Adriano.gilli@maccaferri.co.za
www.maccaferri.co.za

SUPPLIERS OF GOODS AND SERVICES TO THE INDUSTRY

C. Steinweg Bridge
Representative: Willem Fourie
Tel: +27 11 625 3000
Willem.Fourie@za.steinweg.com

Cadex Systems SA (Pty) Ltd
Representative: John Swallow
Tel: +27 11 463 1857
johnswallow@cadexsa.com
www.cadexsa.com

Bentley Systems South Africa (Pty) Ltd
Representative: Tennyson Maimbo
Tel: +27 11 253 3016
tennyson.maimbo@bentley.com
www.bentley.com

Dram Industrial Painting Contractors
Representative: Martin Gossayn
Tel: +2711 660 7594
admin@dram.co.za
www.dram.co.za

First Cut (Pty) Ltd
Representative: Steve Van Wyk
Tel: +27 11 614 1112
stevev@firstcut.co.za
www.firstcut.co.za

Lindapter International
Representative: Louise Foster
Tel: +44 (0) 1274 521444
lfoster@lindapter.com
www.lindapter.com

Peddinghaus Corporation of South Africa
Representative: Miranda Dutour
Tel: +1 815 937 3800
miranda-dutour@peddinghaus.com
www.peddinghaus.com

Retecon (Pty) Ltd
Representative: Hans-Peter Neth
Tel: +27 11 976 8600
neth@retecon.co.za
www.retecon.co.za

SGS Metlab (Pty) Ltd
Representative: Jacoline Botha
Tel: +27 11 917 5173
jacoline.botha@sgs.com
www.metlab.co.za

Southey Holdings (Pty) Ltd
Representative: Viloshini Pillay
Tel: +27 11 579 4600
vpillay@southey.co.za
www.southeycontracting.co.za

Timrite (Pty) Ltd
Representative: Deon Kruger
Tel: +27 11 475 1600
d.kruger@timrite.co.za
www.timrite.co.za

EMERGING/DEVELOPING

Four Tops Engineering Service cc
Representative: Nyameko Ntsulumbana
Tel: +27 72 229 9128
fourtopseng@vodamail.co.za

ISILO Steel
Representative: Michael Perimal
Tel: +27 11 861 7612
michael.perimal@isilosteel.co.za
www.isilosteel.co.za

Zamani Engineering Services cc
Representative: David Nkosi
Tel: + 27 13 690 1978
david@zamaniengineering.co.za

SASFA memBeRS

MAJOR MATERIAL SUPPLIERS

ArcelorMittal South Africa
Representative: Melvin Hickers
Tel: +27 16 889 4046
Melvin.hickers@arcelormittal.com
www.arcelormittal.com

Marley Building Systems
Representative: Annemarie Robertson
Tel: +27 82 568 1358
annemarie.robertson@marley.co.za

Saint-Gobain Gyproc SA (Pty) Ltd
Representative: Atisha.Gopichund-Lutchman
Tel: +27 12 657 2800
Atisha.Gopichund-Lutchman@saint-gobain.com
www.gyproc.co.za

Saint-Gobain Isover
Representative: Atisha.Gopichund-Lutchman
Tel: +27 12 657 2800
Atisha.Gopichund-Lutchman@saint-gobain.com
www.isover.co.za

OTHER MATERIAL AND COMPONENT SUPPLIERS

Izinga Roofing (Pty) Ltd
Representative: Jerred Micholson
Tel: +27 31 466 1968
jerred@izinga-sa.com
www.izinga-sa.com

Kare Industrial Suppliers
Representative: Reitze Hylkema
Tel: +27 11 941 3170
reitze@kare.co.za
www.kare.co.za

Rigifoam
Representative: Lyle Jeffery
Tel: +27 11 421 0313
lyle@rigifoam.com
www.rigifoam.com

LSFB MANUFACTURERS

AV Light Steel
Representative: Vincent Bender
Tel: +27 79 954 1374
vincent@avlightsteel.co.za
www.avlightsteel.co.za

Dezzo Roofing (Pty) Ltd
Representative: Brandon Harding
Tel: +27 87 057 8550
brandon@dezzoroofing.co.za
www.dezzoroofing.co.za

Impoqo Trading cc
Representative: Mpumelelo Nhlapo
Tel: +27 11 868 1132
mpumi@impoqo.co.za

Kwikspace Modular Buildings Ltd
Representative: David van Zyl
Tel: +27 11 617 8000
davidvz@kwikspace.co.za
www.kwikspace.co.za

MiTek Industries South Africa (Pty) Ltd
Representative: Uwe Schluter
Tel: +27 11 237 8700
marketing@mitek.co.za
www.mii.com/southafrica

Rajan Harinarain Construction (Pty) Ltd
Representative: Rajan Harinarain
Tel: +27 74 184 8881
rhconstruction1@gmail.com
www.rhconstruction1.co.za

Razorbill Properties 127 (Pty) Ltd
Representative: Vernon van der Westhuizen
Tel: +27 16 423 1749/50
vernon@razorb.co.za
www.razorb.co.za

Simmers and Jack (Pty) Ltd
Representative: Daniel Watson
Tel: +27 11 706 6552
daniel.w@simmers.co.za
www.simmers.co.za

Siteform Roofing and Framing
Representative: Johan Fourie
Tel: +27 51 451 2166
info@siteform.co.za
www.siteform.co.za

Steel Frame Developments
Representative: Ryan Minietti
Tel: +27 83 296 3078
ryan@steelfd.co.za
www.steelfd.co.za

Trumod (Pty) Ltd
Representative: Peter Thompson
Tel: +27 11 363 1960
peter@trumod.co.za
www.trumod.co.za

Zambezi Roofing & Steel
Representative: David Gale
Tel: +260 211 287684 / +27 76 301 5096
david.gale@zambezi-roofing.com
www.zambezi-roofing.com

SERVICE CENTRES AND DISTRIBUTORS

Framecad
Representative: Sello Tlhotlhalemajoe
Tel: +27 11 064 5759
SelloT@framecad.com
www.framecad.com

Global Innovative Building Systems
Representative: Tammy Bywater
Tel: +27 11 903 7080
tammy@gissa.co.za
www.gissa.co.za

Global Specialised Systems KZN (Pty) Ltd
Representative: Thys Visagie
Tel: +27 31 468 1234
gmkzn@globaldbn.co.za
www.globalsystems.co.za

Scottsdale
Representative: Steve Cullender
Tel: +27 11 486 4195
steve.cullender@scottsdalesteelframes.com
www.scottsdalesteelframes.com

United Fibre Cement Company
Representative: Leon Bekker
Tel: +27 21 933 0052
leon@ufcc.co.za
www.ufcc.co.za

DESIGN CONSULTANTS

By Design Consulting Engineers
Representative: Barend Oosthuizen
Tel: +27 21 883 3280
barend@bydesign.org.za

C-Plan Structural Engineers (Pty) Ltd
Representative: Cassie Grobler
Tel: +27 11 472 4476
kc@cplan.co.za
www.cplan.co.za

Hage Project and Consulting Engineers
Representative: Gert Visser
Tel: +27 16 933 0195
gert@hage.co.za

Hull Consulting Engineers cc
Representative: Mike Hull
Tel: +27 11 468 3447
hull@iafrica.com

Martin & Associates
Representative: Ian Upton
Tel: +27 31 266 0755
ibu@martinjw.co.za

ASSOCIATE MEMBERS

AAAMSA Group
Representative: Hans Schefferlie
Tel: +27 11 805 5002
aaamsa@iafrica.com

ABSA Bank
Representative: Deon Brits
Tel: +27 11 350 3287
deonbr@absa.co.za

CSIR (Built Environment)
Representative: Llewellyn Van Wyk
Tel: +27 12 841 2677
lvwyk@csir.co.za
www.csir.co.za

HDGASA
Representative: Robin Clarke
Tel: +27 11 456 7960
robin@hdgasa.org.za
www.hdgasa.org.za

IZASA
Representative: Rob White
Tel: +27 83 456 4989
robwhite@icon.co.za
www.izasa.org

NASH New Zealand
Representative: Gordon Barratt
www.nashnz.org.nz

NASH Australia
Representative: Ken Watson
www.nash.asn.au

Pretoria Institute for Architecture
Representative: Mauneen Van Wyk
Tel: +27 12 341 3204
admin.pia@saia.org.za
www.saia.org.za

Standard Bank
Representative: Johann Strydom
Tel: +27 11 631 5977
Johanjj.strydom@standardbank.co.za

Steel Framing Alliance (USA)
Representative: Mark Nowak
www.steelframingalliance.com

University of Cape Town
Department of Civil Engineering
Representative: Sebastian Skatulla
Tel: +27 21 650 2595
sebastian.skatulla@uct.ac.za

University of Pretoria
Faculty of Engineering
Representative: Riaan Jansen
Tel: +27 12 420 4111
riaan.jansen@up.ac.za

University of the Witwatersrand
School of Mechanical Engineering
Representative: Terrance Frangakis
Tel: +27 11 717 7333
terrance.frangakis@wits.ac.za

BUILDING INDUSTRY

Ambient Contracting Services (Pty) Ltd
Representative: Carlos Ferreira
Tel: +27 11 663 9100
acstenders@ambient.co.za
www.abecontracting.co.za

Bakhusele Business Solutions (Pty) Ltd
Representative: Edwin Mkhabela
Tel: +27 13 755 4480
edwin@bakhusele.co.za
www.bakhusele.co.za

Container Consumables & Industrial Supplies
Representative: Leslie Sivasunker
Tel: +27 32 533 2266
lez@containerconsumables.co.za

Delca Systems (Pty) Ltd
Representative: Dr Mercy Mafara
Tel: +27 31 266 5900
info@delca.co.za
www.delca.co.za

E4 Construction (Pty) Ltd
Representative: David Welsh
Tel: +27 82 688 9988
david@e4construction.com
www.e4construction.com

Futurecon
Representative: Gerrit Burger
Tel: +27 82 826 0948
gerrit@futurecon.co.za

Group Five Housing (Pty) Ltd
Representative: Paul Thiel
Tel: +27 10 060 1555
pthiel@groupfive.co.za
www.groupfive.co.za

Halifax Projects
Representative: Marc Barnfather
Tel: +27 79 852 8572
marc@umgeniprojects.co.za

Lakeshore Trading 102 cc
Representative: Linky Delisile
Tel: +27 31 706 3695
deli@lakeshore.co.za

Ohlhorst Africa LBS (Pty) Ltd
Representative: Sergio Ferreira
Tel: +27 12 327 2411
info@ohlhorst.co.za
www.ohlhorst.co.za

Rancor
Representative: Charl van Zyl
Tel: +27 82 881 6879
charl@rancor.co.za
www.rancor.co.za

Rapid Build Technologies (Pty) Ltd
Representative: Andre Schlunz
Tel: +27 72 647 2533
andre@rbtafrica.com
www.rapidbuildtechnologies.co.za

Shospec (Pty) Ltd
Representative: Bjorn Kahler
Tel: +27 33 386 0100
bjorn@shospec.co.za
www.shospec.co.za

SMC Africa
Representative: Andrew Dewar
Tel: +27 82 491 2717
andrew@smcafrica.com
www.smcafrica.com

Stag Homes cc
Representative: John Schooling
Tel: +27 21 794 0904
johns@stagprop.com
www.stagprop.com

Top Plan
Representative: Sarel Oberholzer
Tel: +27 21 903 3189
info@topplan.co.za
www.topplan.co.za

Zamadunga Business Enterprise
Representative: Thandi Ngcobo
Tel: +27 31 701 5431
info@zamadunga.co.za

Zookie Construction and Projects
Representative: Reshoketswe Nakene
Tel: +27 12 767 8820
zookiecp@gmail.com

SAmCRA memBeRS

ALLIED PRODUCTS

Ash & Lacy South Africa (Pty) Ltd
Representative: Dion Marsh
Tel: +27 11 792 9283
dion.marsh@ashandlacy.com

Butyl Seal (Pty) Ltd
Representative: Ken Atkinson
Tel: +27 11 462 1840
atkinsonkh@gmail.com
www.butylseal.co.za

Butyl Technology (Pty) Ltd
Representative: James Graham
Tel: + 39 976 1114
james@butech.co.za
www.butech.co.za

GCF Projects
Representative: Dale McLeod
Tel: +27 855 1243
info@gcfprojects.co.za
www.gcfprojects.co.za

Kare Industrial Suppliers (Pty) Ltd
Representative: Reitze Hylkema
Tel: +27 11 334 0922
reitze@kare.co.za
www.kare.co.za

PIA Solar SA (Pty) Ltd
Representative: Colin Muller
Tel: +27 41 366 1911
colin.muller@piasolar.com
www.piasolar.com

Saint Gobain Construction Products South Africa (Pty) Ltd
Isover Division
Representative: Bernard Asquith
Tel: +27 12 657 2800
bernard.asquith@saint-gobain.com
www.isover.co.za

CONTRACTOR

Chartwell Roofing (Pty) Ltd
Representative: Mike Read
Tel: +27 83 625 1557
mike@chartwellroofing.co.za
www.chartwellroofing.co.za

Doublejack Construction (Pty) Ltd
Representative: Jason Knight
Tel: +27 11 828 3453
jason@doublejack.co.za

Roofline (Pty) Ltd
Representative: Terry Thorp
Tel: +27 11 900 3250
tthorp@roofline.co.za
www.roofline.co.za

Tate & Nicholson
A division of Southey Holdings (Pty) Ltd
Representative: Martin Bakker
Tel: +27 11 464 0910
mbakker@tn.co.za
www.southey.co.za

PRODUCER/MILL

ArcelorMittal South Africa
Representative: Jan Kotze
Tel +27 16 889 9111
jan.kotze@arcelormittal.com
www.arcelormittal.com

SAFAL Steel (Pty) Ltd
Representative: Sally Stromnes / Raghu Raghuram
Tel: +27 11 944 6800 / 31 782 5569
sally.stromnes@safalgroup.com / raghu.ram@safalgroup.com
www.safalgroup.com

PROFILER/MANUFACTURER

Global Roofing Solutions
a Division of Consolidated Steel Industries (Pty) Ltd
Representative: Johan van der Westhuizen
Tel: +27 11 898 2902
johan@globalroofs.co.za
www.global-roofing-solutions.co.za

Heunis Steel (Pty) Ltd
Representative: Anton Heunis
Tel: +27 12 372 0021
anton@heunis.co.za
www.heunis.co.za

Macsteel Roofing
Representative: Lance Comber
Tel: +27 11 878 7500
Lance.Comber@macroofing.co.zaa

Safintra South Africa (Pty) Ltd
Representative: Rainer Straussner
Tel: 0861 723 542
rainer.straussner@safalgroup.com
www.safintra.co.za

pOLASA memBeRS

Ablon Construction cc
Representative: Mel Steyn
Tel: +27 57 352 1081
mel@ablon.co.za
www.ablon.co.za

ACTOM Electrical Products
Representative: Mike Ullyett
Tel: +27 11 878 3050
mike.ullyett@actom.co.za
www.actom.co.za

ARB Electrical Wholesalers
Representative: Pauline Seaman
Tel: +27 31 910 0201
paulines@arb.co.za
www.arb.co.za

Avlock International
Representative: Tommy Holmes
Tel: +27 11 748 7000
tommy@avlock.co.za
www.avlock.co.za

Babcock Ntuthuko Powerlines
Representative: Gary Whalley
Tel: +27 11 739 8240
gary.whalley@babcock.co.za
www.babcock.co.za

BASH Electrical Contractors cc
Representative: Shane Bennett
Tel: +27 11 494 5480
shane@bashelec.co.za
www.bashelec.co.za

CIS Engineering
Representative: Christo Marais
Tel: +27 16 422 0082
christo@cisengineering.co.za
www.cisengineering.co.za

Consolidated Power Projects
Representative: Mduduzi Mabaso
Tel: +27 11 805 4281
Mduduzi.Mabaso@concogrp.com
www.conco.co.za

Cullin Africa
Representative: Krish Chetty
Tel: +27 11 848 1400
krish@cullin.co.za
www.cullin.co.za

Down Low Construction & Projects 56 cc
Representative: Calvin Mutize
Tel: +27 84 993 5599
dlc56projects@gmail.com
www.dlcgroup.co.za

Dyambwini Construction & Project Solutions
Representative: Vincent Kanyongolo
Tel: +27 12 332 5898
vincent@dyambyini.co.za
www.dyambwini.co.za

EBM
Representative: Roger Martin
Tel: +27 11 2880000
roger@ebm.co.za
www.ebm.co.za

IMAB Power
Representative: Fleming Adamson
Tel: +27 11 814 6248
fleming.adamson@imab.co.za
www.imab.co.za

Jewll Industries (Pty) Ltd
Representative: Wilhelm van der Lingen
Tel: +27 86 153 9550
wim@jewll.co.za
www.jewll-flameproof.com

Jyoti Structures Africa
Representative: Bruno DalBianco
Tel: +27 11 586 0100
bdalbianco@jyotiafrica.com
www.jsl.co.in

KEC International Limited
Representative: Sherwin Chetty
Tel: +27 11 018 4000
chettysb@kecrpg.com
www.kecrpg.com

McWade Productions
Representative: Marc Hindle
Tel: +27 11 316 2262
march@mcwade.co.za
www.mcwade.co.za

Metpress
Representative: Sagren Moodley
Tel: +27 11 825 5334
sagren@metpress.co.za
www.metpress.co.za

Mkhulu Electro Distribution Projects
Representative: Zola Hlatshwayo
Tel: +27 11 814 4169
systems@mkhulu-edp.co.za

Murray & Roberts Power & Energy
Representative: Gordon Sneddon
Tel: +27 11 372 8585
gordon.sneddon@murrob.com
www.murrob.com

Pfisterer
Representative: Geoff Myburgh
Tel: +27 33 397 5409
geoff.myburgh@pfisterer.co.za
www.pfisterer.co.za

Powerpro Technologies & Training Facility
Representative: Ernest Coetzee
Tel: +27 11 739 4200
ernest@powerpro.co.za
www.powerpro-training.com

Preformed Line Products
Representative: John Buyers
Tel: +27 33 397 5800
johnb@preformedsa.co.za
www.preformedsa.co.za

Ramagale Holdings
Representative: Peter Ramaite
Tel: +27 11 234 4045
peter@ramagale.co.za
www.ramagale.co.za

Resolute Environment Solutions
Representative: Alfred Ayres
Tel: +27 72 146 6937
alfred@resoluteenviro.co.za
www.resoluteenviro.co.za

SCAW South Africa (Pty) Ltd
Representative: Morgan Pillay
Tel: +27 11 876 2644
mpillay@scaw.co.za

Sicame South Africa
Representative: Jean-Luc Lagarde
Tel: +27 21 511 8267
jll@iafrica.com

Siyazama Professional Management Services
Representative: Enrica Furlan
Tel: +27 11 814 4169
info@siyazama-training.co.za

Structa Technology
Representative: Hercules Rossouw
Tel: +27 16 362 9100
hercules@structa.co.za
www.structa.co.za

Tel-Screw Products
Representative: Ronald Teleng
Tel: +27 11 917 9710
info@telscrew.co.za
ronnieteleng@me.com
www.telscrew.co.za

TESMEC SA
Representative: Simone Fiorini
Tel: +27 11 397 2386
info@tesmecsa.co.za
www.tesmecsa.co.za

The Aluminium Federation of South Africa
Representative: Mark Krieg
Tel: +27 11 455 5553
markk@afsa.org.za
www.afsa.org.za

Trans-Design
Representative: Robin Page
Tel: +27 83 254 6598
robin@trans-design.co.za

Tricom Structures –
A subsidiary of Robor
Representative: David van Staden
Tel: +27 11 971 1816
DvStaden2@tricom1.co.za
www.tricom1.co.za

ASTpm & STeASA memBeRS

Arcelor Mittal South Africa
Representative: Hannes Basson
Tel: +27 16 889 3419
hannes.basson@arcelormittal.com
www.arcelormittalsa.com

ArcelorMittal SA Seamless Tube Division
Representative: Roche Bester/ Nigo Dladla
Tel: +27 16 450 4220
roche.bester@arcelormittal.com
www.arcelormittal.com

Augusta Steel (Pty) Ltd
Representative: Paul Bowman/ Nico Erasmus
Tel: +27 11 914 4628
paulb@augustasteel.co.za
www.augustasteel.co.za

Aveng Trident Steel Tube Division
Representative: Peter Curr
Tel: +27 11 389 8752
peter.curr@trident.co.za
www.avengsteel.com

Barnes Tubing Industries (Pty) Ltd
Representative: Andy Smith
Tel: +27 11 923 7340
andy@barnestubing.co.za
www.barnestubing.co.za

Garsin Engineering
Representative: Walter Novelli
Tel: +27 11 828 9732
walter@garsin.co.za
www.garsin.co.za

Group Five Pipe
Representative: Gerald Blackburn
Tel: +27 21 386 1923
gblackburn@groupfivepipe.co.za
www.g5p.co.za

Hall Longmore (Pty) Ltd
Representative: Kenny Van Rooyen
Tel: +27 11 874 7300
kenny.vanrooyen@hall-longmore.co.za
www.hall-longmore.co.za

Honingcraft (Pty) Ltd
Representative: Gerhard Hauptfleisch
Tel: +27 11 824 5320
gerhard@honingcraft.co.za
www.honingcraft.co.za

Macsteel Tube and Pipe (Pty) Ltd
Representative: Werner Petrick
Tel: +27 11 897 2100
werner.petrick@mactube.co.za
www.macsteel.co.za

New Concept Mining
Representative: Charles Hart/ Morne Smuts
Tel: +27 11 494 6000
charlesh@ncm.co.za
www.ncm.co.za

Pro Roof Steel Merchants (Pty) Ltd
Representative: Peter Potgieter
Tel: +27 16 450 5800
peter@proroof.co.za
www.proroof.co.za

Unispan Manufacturing
Representative: Thomas Spykerman
Tel: +27 11 462 8965
thomass@uni-span.co.za
www.uni-span.co.za

FICEP

Automatic CNC drilling, drilling & band sawing, drilling & coping lines for profiles.

ROTATING SPINDLE

The rotating spindle can process both flanges and web with extremely reliable performances.

MAIN FEATURES

- Affordable solution without compromising on reliability of this beam line.
- The robust rotating spindle assures the highest level of confidence and peace of mind even after many years of intense work.
- The performance of the direct drive spindles makes sure the highest standards of performance and quality are achieved.
- Remote diagnosis is possible through a network connection that allows our service team to perform routine checks.

PRODUCTIVITY | RELIABILITY | QUALITY

Contact Patrick Pereira

Tel: 011 976 8600 • Fax: 011 394 2471

machines@retecon.co.za • www.retecon.co.za

Cape Town: 021 555 2270/1 • Port Elizabeth: 041 453 2720 • Durban: 031 701 8149

MTMA

RETECON (PTY) LTD
Your Partner in Metal Working

Trimble

Don't freeze in the middle of your structural projects.

Ville Rousu, Product Development Director, Tekla products

THE NEW TEKLA STRUCTURES 2018 offers you faster 3D modelling process from concept to production and control over change. With drawings that are live windows to your model, reviewing and adding drawing content has become quicker and easier. The workflow from design and analysis to detailing, fabrication and construction is smoother than ever. Be it on the arctic or the equator.

www.tekla.com/2018

Cadex SA
Tekla Structures Partner

info@CadexSA.com
www.CadexSA.com

TRULY CONSTRUCTIBLE. Tekla