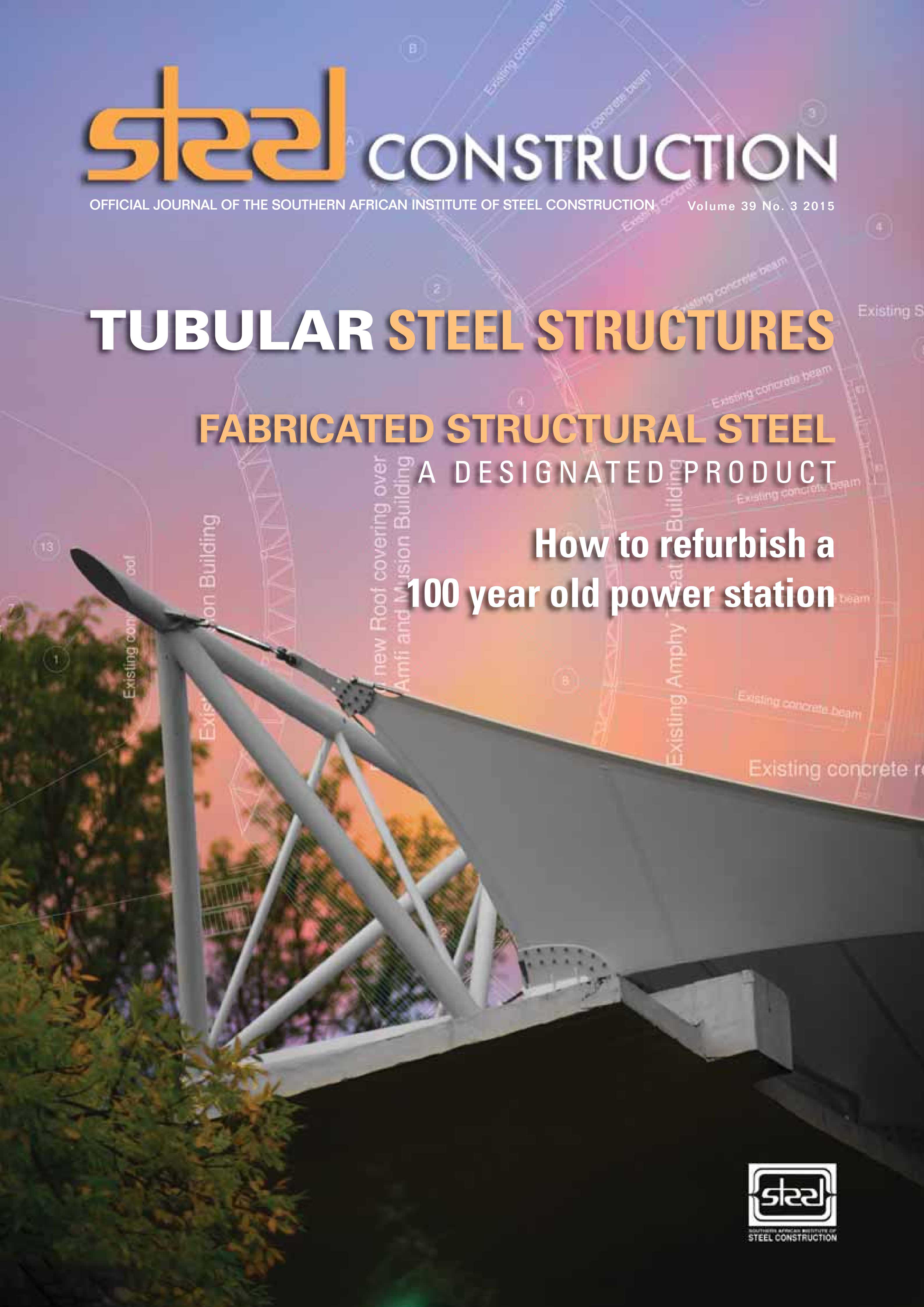

steel CONSTRUCTION

OFFICIAL JOURNAL OF THE SOUTHERN AFRICAN INSTITUTE OF STEEL CONSTRUCTION
Volume 39 No. 3 2015

TUBULAR STEEL STRUCTURES

FABRICATED STRUCTURAL STEEL
A DESIGNATED PRODUCT

How to refurbish a 100 year old power station

SOUTHERN AFRICAN INSTITUTE OF STEEL CONSTRUCTION

Total process optimization

Bob (35) knows the most efficient way to design, detail, and fabricate a steel structure. His company uses Tekla to automate fabrication and project management through interfacing with MIS systems and CNC machinery. What's more important, sharing the Tekla model allows the project team members to stay in the building information loop real-time.

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Front Cover:
University of Pretoria Amfi Roof Structure
Photographer: Mariki Uitenweerde

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Volume 39 No. 3 2015

OFFICIAL JOURNAL OF THE SOUTHERN AFRICAN INSTITUTE OF STEEL CONSTRUCTION

in this issue...

Join us on and YouTube

editor's note

"Yippeee!! The entries for Steel Awards 2015 have been submitted, processed and the judges have had a look at them. I have been the 'first point of contact' to receive the entries for the SAISC for quite a few years now, but it still feels like opening a present when I receive a submission, open it and then usually look at the images first. While Spencer (usually the next person to look at them) is more intrigued by their innovative engineering and fabrication solutions.

The Steel Awards Judges are ready to travel all over the country (even giving up their weekend and public holiday) to visit the shortlisted entries. Thank you to everyone who entered their project and went through the trouble of completing all the forms and other requirements.

In this issue we feature a few tubular steel entries, varying in their size, application and use. Tubular steel has been the answer to many intricate design and aesthetical requirements of projects through the years.

It is officially winter now and people tend to stay more indoors and look gloomily out of the window *(ok, I am only using myself as an example)*. The Industry is also in a kind of 'winter', trying to survive these difficult times.

That is why we decided on a rainbow for the cover of the magazine. Maybe it will cheer up your day and motivate you to see what today can offer for a brighter future.

BUY SOUTH AFRICAN

By Paolo Trinchero,
Chief Executive Officer, SAISC

"REMEMBER that each and every one of us can make a difference to a local manufacturer. Don't ask for incentives and localisation targets if you do not practice what you PREACH."

We read about our challenges every day, one of my colleagues has insisted that if I use the word "challenge" one more time, I might disappear. What can we do? Here's an Idea!!

Buy South African.
BUY SOUTH AFRICAN!! (and African!)

If each and every one of us does our bit, we could stimulate demand. In a recent article on the Australian budget I found a gem. For the next two years, under the federal government's plan, Australia's small businesses will now be able to claim an immediate tax deduction for every item they purchased up to $20,000. No mention of buy Australia but they are Australian after all.

We have been working with DTI on a number of initiatives regarding designation of fabricated structural steel and other products. The most recent being published in their industrial policy action plan.

Remember that each and every one of us can make a difference to a local manufacturer. Don't ask for incentives and localisation targets if you do not practice what you preach.

Buy South African!

We have been pushing the limits of the SAISC staff over the last few weeks but as always they deliver.

A number of students have come through the first half of the Steel Academy courses. Thank you to all the 'students' and lecturers, we have had excellent feedback. Also expect more new and relevant courses from the Steel Academy.

One of the positives of all the connection design courses and presentations on the SAISC eToolkit is that massive savings are possible on connection design. Not only are the connection designs in the eToolkit lighter, they are much cheaper to fabricate (i.e. massive savings in hours) compared to some of the so called 'standard designs' our fabricators are expected to use. So please continue to "Come, Learn and Interact".

Buy South African!

Multi-storey steel framed buildings are popping up in a number of places. There are some game changing developments happening at the moment one of which is being developed by the SAISC. The most recent Steel Academy course on fire engineering design was well attended. We hope that new knowledge will improve our competitiveness even further.

Two of our interns are now finishing their training and should now graduate. I would like to thank Genrec Engineering and Tass Engineering for assisting us. Come on guys, this is an opportunity for you to make a meaningful contribution to transformation by training and developing young South Africans. Many of these young graduates are now looking for opportunities in our industry. There are too many young people in our country with degrees who are unable to find meaningful employment so let's utilise these young brains to help us push the industry forward. See *page 9* for a letter of thanks from one of our interns. Yes, we can make a difference this is real transformation in action.

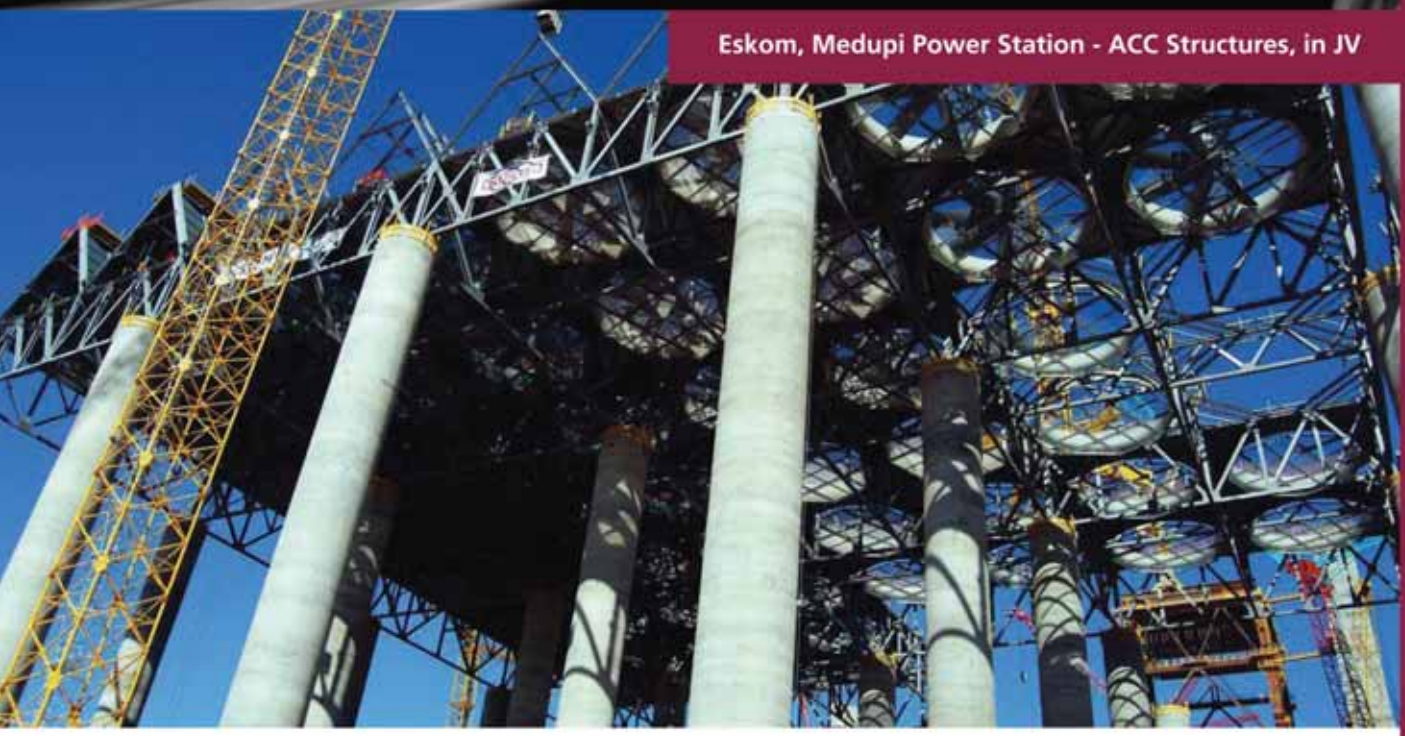
We have just added another sub-association to the SAISC group – The Association of Structural Steel Draughtsman (ASSD). Thank you, to all involved in setting up this association. I believe that we not only have excellent detailers and draughtsman out there but by working more closely with other disciplines we can achieve our competitiveness goals.

This is another: *Buy South African!*

Watch this space as there are a few more associations on the way which I believe will add value to the steel industry.

CADCON

STEEL CONSTRUCTION AND ENGINEERING



Eskom, Medupi Power Station - ACC Structures, in JV

Established in 1987, Cadcon, as a vibrant and reputable entity, has grown into a leading steel construction, designing and engineering organization involved in major projects in and around Southern Africa and internationally. Cadcon operates from their 15 400 m² workshop and office facilities in Centurion, Pretoria, housing state of the art machinery and latest technology CNC plate, beam, angle, cutting, drill and saw facilities serviced by 20 overhead cranes. Cadcon has also implemented the FabTrol System providing drawing management, material nesting, purchasing, inventory control, production and CNC management, shipping and more.

Eskom, Medupi Ducting Supports, Lephalale

Planning and completion of various significant and complex national and international projects on time, for commercial, industrial, mining and plant sectors, serves as testimony putting Cadcon as a leader at the cutting edge, in a rapidly growing and competitive environment. Cadcon has valuable experience in exports of steel products internationally and strong innovative contributions to the whole of Southern Africa.

Overall Winner SAISC Steel Awards 2011
Sandton City - Protea Court Rooflight, in JV

Furthermore, Cadcon's unique packages include the design and supply of buildings through Mictec, Cadcon's in-house engineering design department. Additional services include crane, truck and trailer hire.

Cadcon operates their full production process from the delivery of raw material, fabrication, abrasive blasting, corrosion protection, erection and finishing to the proud delivery of the final product through their team of graduates and dedicated artisans. Cadcon's methodologies and processes results in their ability to provide their clients with turnkey solutions at optimum efficiency; **STRIVING FOR EXCELLENCE AND PEACE OF MIND IN STEEL CONSTRUCTION**, this being the cornerstone of Cadcon's success and competency.

steel
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Changing OF THE GUARD at the SAIW

By Alan Browde for the SAIW

"I want to thank all those who have helped me in a job that I have really enjoyed. From the various SAIW Councils and Presidents to our great SAIW team and from our members to all our dedicated suppliers, I couldn't have done the job without you."

SAIW
Southern African Institute of Welding

ABOVE: Jim Guild, Executive Director of the SAIW since December 2000, has retired and long-serving SAIW Operations Manager, Sean Blake, has been appointed SAIW Executive Director as of April 2015.

Jim Guild, Executive Director of the SAIW since December 2000, has retired and long-serving SAIW Operations Manager, Sean Blake, has been appointed SAIW Executive Director as of April 2015.

Jim says that his tenure at the Institute can be described as "steady progress". The fact, however, is that it is more apt to describe Jim's achievements as massive. When he started at the end of 2000 the SAIW was really a very small organisation with no international recognition of its courses; it was struggling financially and was fully reliant on sponsorship for its income. In short, it was hardly a going concern.

Today it is the leading welding training organisation on the continent and is self-sufficient. Its courses are recognised internationally; it has more than doubled its training population and has earned the respect of the global welding community.

"I put our successes down to exceptional team work," says Jim. "From the beginning of my tenure the old stalwarts, like Ted Barwise, for example, rallied around me to help get things going the way we wanted. Their input was absolutely invaluable. Since then each and every person at the Institute has played his and her part to ensure that we met all our goals and achieved what we did."

Their achievements are very impressive:

2001

SAIW became a Regional Designated Centre (RDC) of the African Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA). It acted as AFRA's Anglophone centre for NDT in Africa. Since then the SAIW has trained around 500 African fellowship students sponsored by the International Atomic Energy Agency (IAEA). The SAIW has also conducted numerous expert missions to assist other African countries establish NDT training and service facilities and has hosted several scientific visits from NDT personnel throughout Africa.

2003

The SAIW was chosen as the Authorised National Body (ANB) of the International Institute of Welding (IIW) able to offer all IIW training courses and issue qualification diplomas.

2005

They established the Young Welder of the Year competition. This biennial event has become the premier welding competition in South Africa attracting young welders from all over the country. The winner represents South Africa at the global WorldSkills competition. The Young Welder competition plays an increasingly important role in promoting welding as a career to the youth of South Africa.

2006

They established permanent representation in Cape Town and Durban and in 2013 established a fully-fledged training facility in Cape Town with a similar facility in Durban imminent.

2006 and 2012

SAIW hosted the IIW Regional Congress twice, hosting speakers and experts from all over the world.

2008

The SAIW was accredited by the IAEA as an Authorised National Body for Company Certification (ANBCC) enabling it to certify fabricators to the ISO 3834 standard. The IAEA periodically sends three experts from around the globe to assess the SAIW standards. More than 70 companies and sites have been certified by the SAIW.

2011 – 2013

They built and equipped a state-of-the-art metallurgical and mechanical test laboratory; a world class multi-purpose auditorium and completed the refurbishment of the interior of the SAIW building.

Other accomplishments over the period included:

- SAIW became an associate member of the International Congress for Non Destructive Testing (ICNDT) and established the African Federation for Non-Destructive Testing (AFNDT), which is now recognised as a regional body by the ICNDT.
- Established training schools at WITS and UP which offer International Welding Engineer and International Welding Technologist programmes. The SAIW sponsors professorial chairs and research and development programmes in these centres of welding expertise.
- In its personnel certification activities, the SAIW has been accredited by SANAS which is South Africa's member of the International Accreditation Forum (IAF).

"I want to thank all those who have helped me in a job that I have really enjoyed. From the various SAIW Councils and Presidents to our great SAIW team and from our members to all our dedicated suppliers, I couldn't have done the job without you.

"Finally, to Sean, you are now at the helm of an organisation which is recognised as a leader in its field and that has the provisions for significant future growth. You have the experience and the wisdom to take the SAIW to unprecedented heights and I look forward to your and your teams' future successes. Good luck!"

Jim Guild has been an avid supporter of the SAISC and has been on the SAISC Board since he became Executive Director of the SAIW in 2000.

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Comair Slow Lounge at Cape Town International Airport

Matlosana Mall, Klerksdorp

Anglo American Cel

Forrest Hill City

Porsche Pretoria Centre

TRT Line 1a Tshwane Rapid Transit – A Re Yeng

Riversands Incubation Hub

William Nicol Showroom

Steyn City Gatehouses, William Nicol Drive and Cedar Road

Steel Awards 2015

Hot Rolled Structural Steel Entries

RESIDENTIAL RESIDENTIAL RESIDENTIAL RESIDENTIAL RESIDENTIAL RESIDENTIAL

House for retired couple, Zinkwazi Beach

House De Clercq – Cape

Breakwater Apartments

New gym and entertainment area for existing residence

House De Clercq and Cottage, Mount Verde, KZN

House Molenaar, Paarl

WOW! We did not expect such a myriad of entries of such variety – from a heavy mining machine to an elegant gym facility extension to a home. The judges have seen them all and will soon be visiting the shortlisted entries. We have loosely grouped the entries into 'shared features' to give you an idea of what is to come at the Steel Awards event on 3 September 2015. Steel Construction showcased the light steel framing entries in the SASFA feature to highlight this building system's many applications **(see page 38).**

WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE

DHL Supply Chain

ARMCO Galvanizers Boksburg – Refurbished Roof over Process Tanks

New Ferrochrome Furnaces Factory

MAN Diesel and Turbo Facility Hilltop Industrial Park

CLADDING CLADDING CLADDING CLADDING CLADDING CLADDING CLADDING CLADDING CLADDING CLADDING

DSTV Multichoice Head Office

St Peters College Auditorium

Newtown Junction

TUBULAR TUBULAR TUBULAR TUBULAR

The Watershed, V&A Waterfront

Covenant Fellowship Church International (CFCI)

Cell C Warehouse, Midrand

Discovery Centre

University of Pretoria Amfi Roof Structure

MINING AND INDUSTRIAL MINING AND INDUSTRIAL MINING AND INDUSTRIAL MINING AND INDUSTRIAL MINING AND INDUSTRIAL

Tweefontein Optimisation Project – Stackers

Medupi Power Station – Air Cooled Condenser

Medupi Power Station – Coal and Ash Terrace

The Edge Restaurant, Naval Hill

Pineslopes Play at Height Bunjee Tower

Parade Infill Deck Cape Town Station

Sentech Masts

Kirstenbosch Centenary Tree Canopy Walkway ('Boomslang')

REFURBISHMENT AND EXTENSION REFURBISHMENT AND EXTENSION REFURBISHMENT AND EXTENSION REFURBISHMENT AND EX-

Steel Spire on top of The Sandton Tower

Roeland Park Office Block Development

Sandton City Atrium on 5th Facade Support Structure

SKA Meerkat Radio Antenna Positioner – Back-Up Structure

Multichoice City

Dorp Street Facade

Society House Hotel and Retail Upgrade

Daventry Road Bridge

WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE WAREHOUSE

208 Gale Street Shree Property

Warehouse Upgrade Kumba

Ndabeni Electrical Depot

Buscor Whiteriver Bus Terminus

SAISC Steel Awards 2015

THE 34th EVENT AND THE 5th STEEL AWARDS PHOTO COMPETITION

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Ndvihuwo's EXPERIENCE AS intern at the SAISC

The SAISC has been involved with the Department of Science and Technology (DST) and Vaal University of Technology to enable National Diploma in civil engineering learners get their one year's experiential training.

Ndvihuwo has now completed his year and his letter of thanks makes us proud to be involved in the programme. Our grateful thanks go out to Genrec Engineering and to Tass Engineering for their part of the workshop and site experience he required.

Southern African Institute of Steel Construction (SAISC)

20 May 2015

Attention: Spencer Erling, Amanuel Gebremeskel

RE: THANK YOU

I wrote this letter to say thanks a lot for the role that you have played in my career path. I felt so grateful being mentored and supervised by you. I feel being honoured, so privilege and pleased to have you in my practical training, and as an opportunity to learn as much as I can with all your guidance.
I really appreciate the efforts you took to show me how every things works in the working environment. You welcomed me and it felt like home from the first minute, much thanks from within my heart.

I now know how it feels to be in a work place and performed all my duties fully. This was the hardest learning curve I got in my life and the most challenging path, but with the guidance and the love of great people besides, I managed to overcome all my weaknesses and change them to be my strengths. It is a privilege to be the first people to get opportunity to be trained by Southern African Institute of Steel Construction (SAISC) with high standards and Genrec Engineering with their high quality workmanship, and having you was a blessing to me.

It has come to my attention that my 12 months practical training contract expires at the end of May 2015. I have to then wait for September to graduate and get my civil engineering diploma.

I have learnt from you and everyone in the office, treating me well, and the way you deal with issues, and taking your time to help me. I want to take this time and say thank you.

Please stay blessed and much thanks

Yours faithfully

Ndivhuwo Nepfumembe

Please fabricators out there... ***It is not so difficult to have the students for six months. Their salary is paid by DST, so when you get a phone call from Paolo or Spencer please come along and do you share in helping these students get their careers off the ground.***

Industry NEWS IN BRIEF

Scaw's Metal certified 'Green'

In March 2015, as a result of its on-going dedication to sustainable business practices, the Scaw Metals Group (Scaw) finally got their steel certified 'Green' by Ecospecifier Global GreenTag South Africa.

This certification is an affirmation of the company's determined efforts to be recognised as a green building partner; manufacturing products that protect nature and its people. "As an organisation, we are dedicated to making sustainable decisions." asserted Markus Hannemann, Scaw Metals Group CEO.

GreenTag SA Certification is a world first, third party, green building product rating system underpinned by rigorous scientific and life cycle assessment (LCA), health, eco-toxicity, greenhouse gas emission and biodiversity assessment processes. The rating system also boasts advanced, robust 'beyond LCA' certification methodology which is independently verified as an ISO 14024 compliant Type 1 Eco label.

Operating under license as Global GreenTag (Pty) Ltd in South Africa, Green Tag, has been acknowledged by the Green Building Council of South Africa (GBCSA) as a valuable assessment tool.

Thus far, Scaw has received certification for its cast products, grinding media, rolled products and wire rod products. These products are Scaw's primary steel products hence the need for their certification. Scaw has advised that they will not pursue certification for their ropes, strand and chain products etc. as these are not produced from Scaw primary steel.

Further proof of the company's ongoing commitment to environmental sustainability rests in its sponsorship of the Steel and Engineering Industries Federation of Southern Africa's (SEIFSA) Environment Stewardship Award category at the upcoming SEIFSA Awards for Excellence.

SSAB is launching Strenx – the new brand for high-strength steels

SSAB is launching Strenx, a new high-strength structural steel product brand, which offers the most extensive portfolio of high-strength steels on the market. This will open up new competitive possibilities for customers to make stronger, lighter and more sustainable products.

Strenx is designed for sectors where structural strength and weight savings are key competitive factors, especially in the lifting, handling and transportation industry. Strenx is also well-suited for agriculture, the frames of heavy mobile machines, rolling stock, offshore and construction sectors. Now customers will be able to design more competitive and sustainable products.

Yield strengths range from 600Mpa to 1300Mpa, which is the strongest steel available on the market. Strenx is available in plate, strip and tubular products in thicknesses ranging from 0.7mm to 160mm.

Strenx comes with guaranteed product consistency, services to help customers' businesses and permanent assistance to enhance end-product performance.

ABOVE LEFT: Markus Hannemann, Scaw Metals Group CEO.

ABOVE RIGHT: Strenx includes all SSAB's hot-rolled plate and strip steels with a yield strength 600 – 1300MPa (also tubes exceeding 600MPa) and certain cold-rolled products. © SSAB

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WSP Green by Design achieves first Existing Building Performance Green Star Rating in Gauteng

WSP Green by Design – a division of WSP / Parsons Brinckerhoff, Africa – set another engineering consulting industry benchmark when WSP House in Bryanston, Johannesburg, was awarded a 3 Star Green Star rating under the Existing Building Performance (EBP) Pilot Rating tool. The rating was certified by the Green Building Council of South Africa (GBCSA).

"We are thrilled with this outcome! When the new EBP tool pilot rating was announced at the annual Green Building Convention last year, we couldn't wait to put it to practice. And what better way to demonstrate its efficacy than with our own building," says Gregory Rice, Sustainability Consultant, WSP / Parsons Brinckerhoff, Building Services, Africa. "We treated this process the same way we would a client's building or project. We employed our own expertise to identify design features and operations already in practice in the management of WSP House. We then collated these operational plans and design documentation into the submission and this was presented to the GBCSA for assessment of the building under the EBP Pilot Rating."

ABOVE: Gregory Rice (left), Sustainability Consultant and Alison Groves (right), Sustainability Consultant, both WSP / Parsons Brinckerhoff, Building Services, Africa.

The Existing Building Performance rating awarded to the project team and the building is a reflection of WSP's commitment to embracing environmental sustainability into the day-to-day operations of the business.

Some of the inherent sustainability features of WSP House include: an abundance of natural light throughout the open plan office spaces; shading on the north facing glazing; occupant controlled blinds; few permanent/fixed interior features to allow for easy adaptation of space, and a naturally ventilated basement to reduce the build-up of pollutants. The management of WSP House also continually maintain documented procurement, replacement and operations processes.

"Of the operational initiatives for this building, the points we were awarded were aligned to our expectations across the board and in some instances, even exceeded them. This demonstrates to us that we are on the right track. Additionally, the feedback we have received not only enabled us to identify areas where we can improve on performance, but it has also provided us with more insight that we can apply to future projects for our clients," concludes Rice.

SA Construction Likely to Continue Treading Water despite Government's Planned Infrastructure Spend

South Africa's construction sector continues to anxiously await the materialisation of the proposed R800-billion of public sector investment in the country's infrastructure over the next three years. However, while this will undoubtedly be a much-needed shot in the arm for the country's ailing construction industry, it should by no means be considered a panacea as the planned investment spend represents little to no growth in infrastructure investment compared to the previous three year period.

That's according to John Orford, Portfolio Manager for Old Mutual Investment Group Macro Solutions, who believes that the SA construction sector's medium-term prospects will almost certainly face headwinds due to lingering electricity challenges.

"While government's infrastructure development rollout will undoubtedly mean the construction industry will experience better days in the coming years, any uptick in activity shouldn't automatically be seen as a cyclical turnaround by investors, as it's very likely that any short-term increase in activity will eventually be tempered by still slow economic growth as a result of energy constraints and delays in the rollout of Eskom's new capacity."

Orford does, however, point out that much of this is already priced into the sector, as evidenced by very subdued share prices compared to the broader market in recent years. And he is also quick to explain that the news coming out of the construction sector has not all been bad in recent years.

"While activity has slowed considerably from the highs preceding the 2010 FIFA World Cup, we have actually seen positive growth in three of the last four years, with real growth in construction investment recorded at 3%, 11.8% and 14% in 2011, 2013 and 2014 respectively, and the potential for low interest rates is likely to continue to underpin the sector during the rest of 2015."

Orford expects the SA construction sector to continue to seek opportunities in international markets including Africa to offset weak domestic growth prospects. However, he also warns that while opportunities in Africa may translate into sustainable growth, these opportunities also come with more than their fair share of project and political risk.

But irrespective of potential for growth in the rest of Africa, the challenges facing the construction sector at home will continue to hamstring its efforts to deliver on its full potential as an important driver of economic growth.

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Designation of

By Kobus de Beer, Industry Development Executive, SAISC and POLASA Secretariat

Finally... after countless meetings

The Department of Trade and Industry (DTI) announced in May 2015 a further set of product designations for local procurement by the public sector and has indicated that efforts will be stepped up during 2015 to improve compliance across all government departments, municipalities, provinces and state-owned companies (SoCs) such as Eskom and Transnet.

Through the Preferential Procurement Policy Framework Act, (the famous PPPFA) Trade and Industry Minister Dr Rob Davies has the authority to direct government departments, agencies and SoCs to procure specifically selected products and services from local manufacturers, or providers.

The newest designations, which have been unveiled together with the latest Industrial Policy Action Plan (IPAP 7) include **power-line hardware and structures, steel conveyance pipes,** as

The newest designations, which have been unveiled together with the latest Industrial Policy Action Plan (IPAP 7), include power-line hardware and structures, steel conveyance pipes, as well as various building construction material designations including fabricated structural steel, pipes and fittings and roofing materials. This is an important break-through for our Industry as it recognises the major role the Steel Construction Industry plays in developing the country as well as achieving job preservation and job creation.

Fabricated Structural Steel – *So What?*

well as various building construction material designations including **fabricated structural steel, pipes and fittings** and **roofing materials.**

How will the DTI ensure compliance?

This is an important break-through for our Industry as it recognises the major role the Steel Construction Industry plays in developing the country as well as achieving job preservation and job creation.

But Davies has also acknowledged that the designation instrument is only as strong as the level of compliance by departments and SoCs, which is currently weak. Manufacturing companies have generally supported the designation concept, but have repeatedly questioned whether it is being implemented and enforced, with many even arguing that they continue to lose public-sector contracts to cheap imports. The department insists that measures will be taken to ensure higher levels of compliance across all government departments and agencies.

Davies has outlined a three-pronged strategy to improve adherence to the designations:

1. Making compliance an audit requirement – detailed compliance guidelines are to be produced in collaboration with the National Treasury, which will guide the auditing and reporting frameworks.
2. Training and capacity building will be undertaken with institutions that lead public procurement and strategic sourcing.
3. A monitoring and evaluation tool is to be developed for designated sectors.

Besides the infrastructure programme, where the aim is to leverage the 18 so-called Strategic Integrated Projects (SIPs), being overseen by the Presidential Infrastructure Coordinating Commission (PICC) to accelerate industrialisation, the DTI is also turning its attention to private-sector supply chains. The department is particularly keen that the "linkages and multipliers that exist between mining and manufacturing" are further developed.

So what should we be doing?

It is clear from the above that the work the SAISC had been doing for some time to create awareness and appreciation for the contribution our industry is making and can make is coming to fruition. Our product, Fabricated Structural Steel can typically achieve a 100% local content requirement and therefore contribute meaningfully to meeting local content targets on other products such as harbour cranes, etc.

As noted above all government buyers will not beat a path to now insist on buying South African and we as an industry will have to make every effort to hasten compliance. Any suspected import of fabricated structural steel has to be reported and investigated. Although mines and others are not bound by "designation", it provides a strong basis from which to demand that they also comply.

Our industry dare not now relax its vigilance as the underlying assumption is that we will improve competitiveness and maintain the high levels of engineering excellence and quality. Our members must redouble their export efforts as this is the best proof of competitiveness and good productivity. Our industry has succeeded in exporting some 150 000 tons of fabricated structural steel per annum for the past few years – this remains the best argument countering all claims of excessive pricing, suspect quality or poor service delivery.

We are very concerned about the high levels of imports of fabricated structural steel as part of major projects for mines and for the new power stations – particularly as methods have been found to import these without paying the 15% import duties levied. This development will now enable us to address this issue with renewed vigour to assist SARS Customs to close these loops and to gain the full benefit of the limited protection our industry does enjoy.

Multi-Storey Steel Framed Buildings

WE ARE GETTING THERE!

By Paolo Trinchero, Chief Executive Officer, SAISC

The SAISC continues to provide an advisory service for multi-storey steel framed buildings. We have done extensive research on the subject and learned a lot from our international peers to re-introduce it as the material of choice when it comes to multi-storey buildings. We are looking forward to the introduction of the SAISC modular building system which will be an innovation in the application of structural steel. The combination of heavy structural framing and light steel curtain walls and interior framing will be a game changer in future.

The use of steel in the multi-storey building sector is based on tangible, client-related benefits including the ability to provide column-free floor spans; efficient circulation space; integration of building services, and the influence of the site and local access conditions in the construction process. For centre city projects, speed of construction and minimum storage of materials on-site require a high level of pre-fabrication, which steel-framed systems accommodate easily.

In many large commercial buildings, a two stage construction process means that the tenant is responsible for the servicing and fit-out, and so the building structure has to be sufficiently flexible to cope with these differing requirements. Many smaller buildings are designed for natural ventilation and with a high proportion of renewable energy technologies built into them.

Steel offers simple solutions to all these requirements.

Speed of construction

Most steel structures are fabricated in the workshop so that the components can be erected on site rapidly. Short construction periods lead to savings in site preliminaries, earlier return on investment and reduced interest charges. Time related savings can easily amount from 3 to 5% of the overall project cost, reducing the client's requirements for working capital and improving cash flow. In many inner city projects, it is important to reduce disruption to nearby buildings and roads. Steel construction dramatically reduces the impact of the construction operation on the locality.

Flexibility and adaptability

Long spans allow internal spaces to be arranged to suit open plan offices, different layouts of cellular offices and variations in office lay-outs throughout the height of the building. Where integrated beam construction is used, the flat soffit gives complete flexibility of lay-out allowing all internal walls to be relocated, leading to fully adaptable buildings.

Sustainability

Many of the intrinsic properties of steel in construction have significant environmental benefits which include:

- A steel structure is 100% recyclable, repeatedly and without any degradation.
- The speed of construction and reduced disruption minimise the environmental impact on the site.
- The flexibility and adaptability of steel structures maximise the life cycle of the building as it can accommodate radical conversions if the purpose of the building changes.

The SAISC continues to provide an advisory service for multi-storey steel framed buildings. We have done extensive research on the subject and learned a lot from our international peers to re-introduce it as the material of choice when it comes to multi-storey buildings.

We are looking forward to the introduction of the SAISC modular building system which will be an innovation in the application of structural steel. The combination of heavy structural framing and light steel curtain walls and interior framing will be a game changer in future.

In the past our steel industry invested heavily in supporting its own products. This is demonstrated by the two projects highlighted below.

MIGPROV office building (1988)

The Metal Industries Pension Fund developed this building in central Johannesburg, which was also formerly occupied by the SAISC, in Anderson Street. The old buildings occupying this city block were knocked down to make way for the new nine-storey MIGPROV office building.

The structural concept was based on the use of composite steel/concrete columns. Although common practice overseas, the use of composite columns was a relatively new concept at the time.

The building consisted of three parking levels and six office floors and it was serviced by a central access core and auxiliary service cores at each end of the building.

Old Mutual – Central Johannesburg (1988-1989)

Old Mutual Properties increased their already high profile in the city and added a 20-storey steel/concrete composite office block to the Johannesburg skyline. The design is typical of multi-storey steel-framed buildings. The services core is a reinforced concrete shell, which provides lateral stability to the structure.

The shear walls were cast progressively behind the steel erection. While the core resists the lateral loads together with part of the vertical loads, the steelwork resists vertical or gravity loads only. This means that the design of the steelwork is considerably simplified. Design of the steelwork was further simplified by using the SAISC-supplied GFD2 computer program.

About 1 900 tons of structural steel and 25 000m² of Bondek, the composite steel deck profile developed by Brownbuilt in conjunction with the SAISC, were used in completing this project.

(Ed Note: SAISC current CEO played a site engineering role during the construction of the Old Mutual building.).

RIGHT: Old Mutual steel framed building.

BELOW LEFT AND RIGHT: The nine-storey MIGPROV office building.

Looking forward to some newer projects, we see a wide variety of the applications of multi-storey steel structures.

Loch Logan Parking Garage (2008)

The structure covers an area of 97m x 70m, with eight floors of parking space. The parking area was maximised by taking the upper five floors over the roadway, and gaining an additional 12 500m² of space area in addition to the 25 000m² available on and above the site itself.

The timeline of the construction of the project was hugely reduced by using a steel/concrete composite structure. In addition, road closure, which was only permitted at night, was kept to a minimum by allowing off-site fabrication of the trusses. Only the erection of the trusses and floor slab required road closure, and this was further limited by the use of pre-cast, pre-stressed slabs for the first level over the road.

The trusses that had to carry the five parking floors are conventional latticed trusses 2.3m deep and comprised 300 x 300 H-sections for the main members top and bottom. Limited lifting capacity required splicing the trusses into manageable lengths of around 7m to 8m which involved substantial bolted connections.

Floor slabs comprised 140mm thick in-situ concrete cast onto Bondek sheeting. The

decking is connected to the beams by site welded steel studs. The contractor elected to prop the beams to limit deflections during the concrete casting stage. This was preferred to the alternative of pre-cambering the beams, as it eliminated a time consuming element from the fabrication stage.

Hyundai Parkade (2014)

The clients brief was to design and fabricate a new parking structure that could accommodate 256 new vehicles, with an unobstructed ground floor area to be used as a workshop. The client also required that the structure should be flexible to provide for future extension.

The solution was a four-level steel structure with composite concrete slabs. The space frame triangular girder and columns are spaced at 8m spans, spanning 20m, and are constructed of tubular sections providing transverse rigidity and strength. The roof sheeting profile chosen was capable of spanning the entire length (width really) of the structure without any purlins.

The site is geographically located in-between two adjacent dealerships and space during construction was limited, making the design a challenging balance between the constructability of the structure and limiting the disruption to the existing businesses. The columns and truss sections were delivered to site fabricated in pieces that needed minimum site assembly and so they were erected as soon as they arrived on site.

Breakwater Apartments, V&A Waterfront (2015)

In 2005 the V&A Waterfront Company developed a multi-level structured parking garage in concrete along Breakwater Boulevard opposite Victoria Wharf. The architect recommended that the foundations be strengthened and the client duly instructed the team to allow for two additional concrete floors in the foundations.

During the great rush before the 2010 World Cup, a plan was made to construct a 220-room hotel above the Breakwater parking garage, whose design necessitated four storeys to be constructed within record time. Sadly the original hotel as conceived was never realised. They did develop advanced designs to build the required four storeys in steel rather than the two storeys provided for in concrete in the original conceptual design. Whilst only two storeys were possible in concrete, four were possible in steel. The four-storey steel structure design work was not wasted, as the same building envelope has since been successfully developed into high-end rental housing in the heart of the V&A.

The structure involved steel posts and portals co-ordinated to the existing concrete structure below, clad in clay masonry and using a Bondek composite slab system. The steel structural elements are clad to deal with the harsh dockside weather conditions and fire safety concerns but architecturally exposed steel is visible on the facade in the form of carefully-detailed steelwork balcony clip-on elements, nautical balustrading, and steel C-sections integrated in to the aluminium windows.

BELOW LEFT: Loch Logan Parking Garage.

BELOW CENTRE: Hyundai Parkade.

BELOW RIGHT: Breakwater Apartments, V&A Waterfront.

Progress and innovation are taking place. The SAISC has been providing design guidance on multi-storey steel frame buildings and have started to introduce a series of courses covering new innovations in integrated one step fire and structural design.

Huge advances have made over the years and we believe that there will be many more buildings going up in steel. WATCH THIS SPACE!

2014 FIFA WORLD CUP BRAZIL STADIUM
ITAIPAVA ARENA FONTE NOVA
REALISATION: **2012 - 2014**
COATING SYSTEM DESCRIPTION:
HEMPADUR ZINC 17360
HEMPADUR FAST DRY 15560
HEMPATHANE HS 55610

Photo: ME/ Portal da Copa/ Março de 2013

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Macsteel Trading cellular beams used to refurbish a 100 YEAR OLD POWER STATION

By Tebogo Raaleka, Engineer – Cellular Beams, Macsteel Trading

Cellular beams were selected for much of the work to create steel beam supports for the new floors within the old shell. With spans of up to 17 metres long, cellular beams were the obvious option for a structural solution.

Luderitz Power Station in Namibia which was built in 1911 is one of the largest buildings in Namibia. After the powerstation closed down, over the years exposure to the elements resulted in the steel structure weathering leaving an empty shell.

The Luderitz Waterfront Development Company bought the building and the surrounding land from the town council. They set aside N$ 59 million towards the rehabilitation and renovation of the old power station. They are also developing the surrounding area. The renovated building is planned to house a university (Polytechnic of Namibia), a number of sporting facilities, a cinema hall and an auditorium with a seating capacity for 350.

The building is a National Heritage Monument, so the structure had to be refurbished without any alteration to its existing external appearance. Plumbco (Pty) Ltd was appointed as the steelwork contractor. Their contract included for the removal of all the old steelwork and, where necessary replace, it with new steelwork. New floors had to be added to accommodate the various facilities.

Cellular beams were selected for much of the work to create steel beam supports for the new floors within the old shell. With spans of up to 17 metres long, cellular beams were the obvious option for a structural solution. Close to 80 tons of manufactured cellular beams were supplied for the project, with cellular beam sizes ranging from 203 x 133 x 25.1 UBs (Universal Beams) through to 533 x 210 x 101 UB.

The reasons why Cellular beams were the best option for this project are numerous and include:

- Due to the process of moving the flanges further apart in the castellating process results in them having a lighter weight when compared with their heavier (non-castellated) universal beams that would be capable of doing the same job
- The openings in the beams allow for easy service integration such as air-conditioning ducting can easily pass through the openings in the sections.
- Cellular beams are ideal for longer spans with reasonable loads on them.

TOP LEFT: Artistic impression of the completed structure.

LEFT: As a National Heritage Monument -the structure had to be refurbished without any alteration to its existing external appearance.

BELOW: Cellular beams were used as steel beam supports for the new floors within the old shell.

PROJECT TEAM

Developer/Owner:
Luderitz Waterfront Development Company

Architect:
Bob Mould Architects

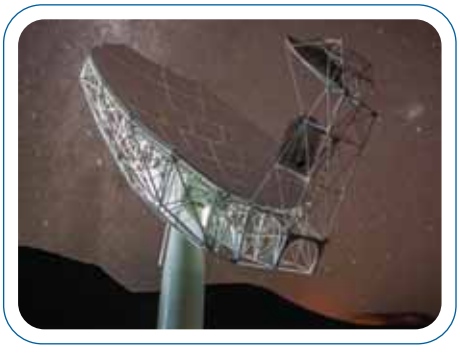
Main Contractor:
Nexus Contractors

Steelwork Contractor:
Plumbco (Pty) Ltd

Cellular beam supplier/contractor:
Macsteel Trading, Cellular Beams

Cellular beams have in recent years been used in a number of Namibian Green and Brown field developments including Swakopmund Indoor Pools, Rundu Fresh Produce Market, Ongwediva Fresh Produce Market and Rooikop Indoor Swimming Pools, to name a few.

TUBULAR *Structures*



Although the number of tubular steel entries for Steel Awards 2015 decreased somewhat in comparison with last year, the wide scope of projects, their complexity and subsequent tubular solutions did not disappoint. From tricky heritage sensitive projects, a 'Boomslang' to a highly technical first in South Africa are featured here.

Structural Hollow Sections (the more technical term) are used more and more in structural applications as they have proven to be aesthetically pleasing and very efficient profiles. They also result in lighter structures. Other benefits include ease of erection and the increased stiffness makes it possible to fabricate longer sections.

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University of Pretoria: Musaion Amphitheatre Roof

A radial tensioned tensile fabric model (using Ferrari Fabrics) was chosen and since only a quadrant was available to work with, hidden compression members needed to be introduced to retain a horizontal semi-circular tubular truss, (fixed to the roof on the Musaion stage side) and a three-dimensional semi-circular tubular truss (fixed to the radially converging and cantilevering beams on the amphitheatre side).

The Musaion Theatre with its adjacent amphitheatre is a well-known building within the heritage sensitive precinct of the University of Pretoria campus. The client's brief called for an all-weather enclosure that did not compromise the existing line of the two opposing edges of the stage and amphitheatre that cantilever towards each other. The design solution was chosen on a competition basis.

PROJECT TEAM

Client:	University of Pretoria
Architect:	ARC Architectural Consultants (Pretoria) (Pty) Ltd
Structural Engineer:	WSP Group Africa (Pty) Ltd
Quantity Surveyor:	Bham Tayob Khan Pretoria Inc.
Project Manager:	ARC Architectural Consultants (Pretoria) (Pty) Ltd
Steelwork Contractor:	CICon PM
Tensile Contractor:	Texwise Architectural Structures (Pty) Ltd
Electrical Engineers:	TPS Consulting Engineers

The amphitheatre accommodates a 3 000 seated audience in a two-tiered semi-circular roofed concrete structure, which is placed 14m detached from the external stage area on a radial pattern.

The design honoured the importance of preserving the heritage of the two structures and proposed a floating roof. An exacerbating factor was that no structural information of the existing structure was available!

As no additional support structure could be introduced to the existing structure and loading capability needed to be assessed, based on codes of practice relevant to the 1950s, a very lightweight solution was needed: A radial tensioned tensile fabric model (using Ferrari Fabrics) was chosen and since only a quadrant was available to work with, hidden compression members needed to be introduced to retain a horizontal semi-circular tubular truss, (fixed to the roof on the Musaion Theatre side) and a three-dimensional semi-circular tubular truss (fixed to the radially converging and cantilevering beams on the amphitheatre side). The tensile fabric and supporting cables, then served as the tension elements.

The construction programme was dictated by the event programme of the Musaion and Amphitheatre and could only be scheduled in the allowed six-week break. The solution was to

fabricate the elements off-site to a precision surveyed matrix. The timeframe did not allow for a re-survey of the erected steel support structure, before cutting and fabricating the tensile fabric. The coinciding national strike in the steel and related industries also did not help the already tight deadlines.

The external tube rolling sub-contractor had no workforce to roll the circular hollow sections. The solution was to cut the main members to shorter lengths, weld the end plates onto the segments, bolt them together and then 'persuade' the three main members into the required radius using Tirfors, chain blocks and the additional help of a forklift against a specially prebuild profile to achieve the necessary radius for the 127 and 150mm diameter tubes. The infill support tubular sections were profiled and positioned and the structure then tack welded together.

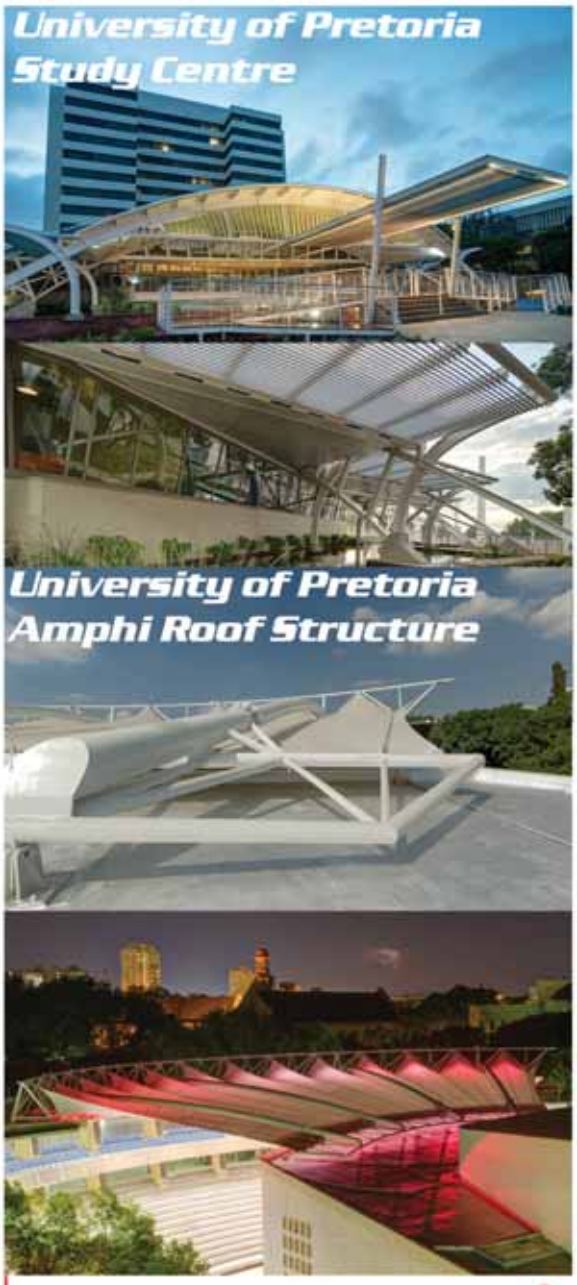
The four main tubular rafters could not be rolled into the required radius, since there was not a large enough machine available in South Africa to do the job. As a solution the tubes were segmented into lengths, cut at an angle and welded together, resulting into a curved compression member.

The structure was then disassembled, welded all round and moved to the yard, where it was assembled again to the original surveyed matrix as was required on site. The four main tubular trusses were also installed and the whole structure surveyed to check and mark the positions of the cleats for the cables required by the textile contractor.

The structure was disassembled again, brought back into the workshop and all cleats were welded on. Thereafter the structure was moved to the sandblasting bay and painted to specification.

During the erection phase, access for a crane to lift the large units into position was limited to a distance of 80m to the nearest concrete surface strong enough to support the crane and its load. This challenge was already solved in the workshop by fabricating smaller sections and then using a spider crane on rubber tracts to get right up to the building to lift the sections the 11m to the roof. The sections were then manually positions and bolted together to form the final curve. The contractor should be commended for initiating creative solutions of transporting completed sections to the site to continue the workflow.

The floor area between the Amphi and the Musaion is heritage sensitive brick paving and therefore large spreader planks were used to protect the paving to build a double tower after which the tubular rafters were hoisted into position with a chain block to the 14m above NGL (Natural Ground Level). This process was repeated four times to achieve the total installation.



The Boomslang

This project was more like crafting a sculpture than designing a structure. To develop a sensitive and appropriate design given the practical constraints of the site required that the architect and engineer collaborate very closely from the outset.

Photographer: Adam Harrower

This is one of those special projects that show what free-thinking architects and engineers can do with steel.

Kirstenbosch, the famous botanical garden at the eastern foot of Table Mountain in Cape Town, required a new and popular experience for visitors, including those who are wheelchair bound, and approached the architect to design a pedestrian bridge between the tree tops of the Arboretum at Kirstenbosch. And so the Tree Canopy Walkway or 'Boomslang', as it affectionately known, was conceived.

Although the budget was very limited, the project team were very excited, albeit rather apprehensive, about the prospect of adding a structure between the trees of this natural treasure. The walkway had to be organic and blend unobtrusively into the forest, while minimising damage to the trees. Steel was clearly the material of choice to satisfy these criteria.

Since the walkway was to be built in an existing forest, a comprehensive survey of the area was done. This established not only ground levels, but the position, height and canopy diameter for every tree. Columns were located relative to trees, and were not necessarily placed at the most efficient structural support positions. Where it was not possible to avoid a particular tree, it was allowed to pass through the structure, and was tied back to ensure that it experienced minimum interference from the structure.

The surveyor was required to accurately set out the position of each column, and the position and orientation of the two abutments on site, so that when steel was delivered to site, everything fitted.

Rather than adding the deck and hand-railing on top of a conventional structure, comprising of trusses or beams, components were designed to be multi-functional, with balustrades and safety mesh being an integral part of the primary structure.

The spine of the structure, a single tube section, forms the bottom chord of a truss. The box section handrails double as the top chords of the left and right trusses. Ribs cut from 8mm plate at 1m centres, serve both as stanchions and as the vertical elements of the trusses.

The ribs are made up of three parts, bolted together below the deck. This ensures efficient use of material; facilitates handling in

PROJECT TEAM

Client:	SANBI (South African National Biodiversity Institute)
Architect:	Mark Thomas Architects, in Association with Christopher Bisset
Structural Engineer:	Henry Fagan & Partners
Quantity Surveyor:	Bernard James & Partners Quantity Surveyors
Land Surveyor:	Stern & Ekermans
Main Contractor:	Slingby & Gaidien Construction
Steelwork Contractor:	Prokon Services
Structural Steel Detailing:	Prokon Services

the confined areas between trees and limited the use of heavy equipment in this sensitive area.

Two longitudinal angle rails, onto which the transverse walkway planking is fixed, also serve more than one purpose. In the interim stage, when only the lower central portion of the walkway was erected, these angles served as top chord members of a triangular truss, with the circular hollow section being the bottom chord.

The 8mm rods forming the safety mesh contribute to the structure as truss diagonals. Their gradient varies with span, being steeper near the columns where shear forces are highest and shallower at mid-span. The curves soften the appearance of the walkway and give the structure the organic feel.

This project was more like crafting a sculpture than designing a structure. To develop a sensitive and appropriate design given the practical constraints of the site required that the architect and engineer collaborate very closely from the outset.

The tender specifications stipulated that all the elements of the bridge be defined in a 3D model developed by the steelwork contractor using a suitable detailing package. Tekla software was used for the detailing.

Movement was always going to be significant. At a late stage of the design process, the deck was raised to clear the tree canopy, optimising the visitor experience. The column lengths increased, from a maximum of 9m to the current 12m maximum length, more than doubling the calculated column deflections. Cable stays have been introduced which limit movement somewhat, though less than cross bracing would have done. Interestingly, feedback from many visitors indicated that movement added an extra dimension of excitement, enhancing their experience.

Once the structure had been fully drawn out, but before manufacturing commenced, a further detailing iteration was required, to ensure that all the transition curves were smooth. To accommodate the changing horizontal and vertical curves, each portion of the central tube, the box sections at the handrails and the angles supporting the deck had to be rolled to the correct radius. The stanchions (single 8mm plate) and central transverse frame sections (double 8mm plate) were laser cut from large steel sheets to create the perfectly smooth curved edges one sees on site.

All components were pre-assembled in the steel yard at precisely the correct angles and slopes.

When installed on site everything fitted perfectly. No on-site cutting or welding was required.

Tight controls were implemented on site to ensure that a very high level of care was taken during construction to protect the natural vegetation.

Since being opened to the public, the 'Boomslang' has proven to be extremely popular. Kirstenbosch saw an increase in visitor numbers of 31.6% from the 2013/14 to the 2014/15 financial year, and attribute this largely to the 'Boomslang' which opened to the public in May 2014.

There is no additional fee to walk on the Boomslang; only the standard Kirstenbosch garden entry fee. However, the increase in gate income from more visitors allowed the capital costs of the bridge to be recovered within one year of it being opened.

Restaurant on the Edge

The long cantilever, which was the wish of the client, was made possible with structural steel beams and columns. The relatively small circular hollow columns which carry the entire slab of the restaurant, cover minimal space on the level below. The diagonal positions of these columns create the impression of tree branches in order to tie in with nature as opposed to compete with it.

Photographer: Reinier Brönn

The Franklin Nature Reserve is only one of two nature reserves in the world which is situated within a city. The Mangaung Metropolitan Municipality decided to build a fine dining

restaurant on Naval Hill in the reserve with a view of Bloemfontein.

The structure was strategically positioned to create a platform from where the city could be viewed and appreciated. The building had to give recognition to the Nelson Mandela statue, which is placed in the immediate vicinity, also overlooking the city. The one main axis of the city is Church Street and the new restaurant is aligned with this prominent street providing a bird's-eye view of the city centre.

The building was to serve an important role from a tourism point of view, where people could meet, not only to enjoy what the restaurant had to offer, but to serve as a hub to learn more about the history and culture of Bloemfontein.

The design team decided to use steel as the primary structural element for two reasons. Firstly, the construction period was relatively tight, and steel beams and columns could be erected in a much shorter time than concrete. Secondly, the long cantilever, which was the wish of the client, was only possible with structural steel beams and columns. The relatively small circular hollow columns which carry the entire slab of the restaurant, use minimum space on the level below. The diagonal positions of these columns create the impression of tree branches in order to tie in with nature as opposed to compete with it. The columns therefore create a spacious area for informal functions.

The building was designed with a mono-pitched roof which slopes in the same direction as the site. One challenge the team faced was the fact that the view towards the city is on the western side. The sun in the Free State, especially in summer can be very harsh, and the facade needed to be protected from it at all cost. A roof overhang of almost 3 metres was the solution. Colorbond roof sheeting was specified in order to achieve the desired Solar Reflectance Index (SRI) which contributes in a big way to the environmental sustainability of the structure. No mechanical ventilation was necessary because the natural ventilation and the strategic orientation of the building take care of the different climatic conditions during all seasons.

The structure was designed in such a way that most of the steel components could be built off-site, only to be assembled on site.

The success of the project is evident as the ANC and the Mangaung Metropolitan Council use this venue for all their prominent functions as a marketing tool for Bloemfontein.

PROJECT TEAM

Client:	Mangaung Metropolitan Municipality
Architect:	Reinier Brönn Architects & Accociates cc
Structural Engineer:	MPS Consulting Engineers
Quantity Surveyor:	Rubiquant Quantity Surveyors
Project Manager:	Insite Landscape Architects
Main Contractor:	David Diva Construction
Steelwork Contractor:	Geleta's Construction
Detailing Company:	MPS

SKA Meerkat Radio Antenna Positioner – Back-Up Structure

Despite high wind loading requirements the overriding design focus was rigidity given the high accuracy requirements of the final instrument. Tubular steel was the material of choice for this application as it provided the right characteristics for the demanding specification.

The Square Kilometre Array (SKA) is a radio telescope project which would have a total collecting area of approximately one square kilometre. It will operate over a wide range of frequencies and be able to survey the sky more than ten thousand times faster than ever before.

South Africa was awarded the bulk of the SKA (Square Kilometer Array) telescope project and the first contract for 64 units was awarded to local company Stratosat Datacom with General Dynamics Satcom Technologies (USA) as a strategic technical partner.

At the tender stage the project was not well defined and the structure was not detailed and still in a concept stage. Suppliers were given minimal information such as wireframe and mass but not much else. No joint details were available and the intention was to give the successful contractor the task of finalising the structural details based on engineering support from Vertex Germany, a world leader in radio telescope design and manufacture. Given Tricom's (now part of Robor) experience and background it made sense that they were eventually selected as the manufacturing partner for the BUS (Back-Up Structure).

The first 12 months of the project was essentially a prototype phase with many design revisions along the way. The prototype was delivered in early 2014 and to date a total of five units have seen their way to the Carnarvon site.

As can be expected there were many challenges along the way.

The elliptically shaped support structure has a final mass of some 25 tons and each structure is made up of 6 000 individual steel

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parts which are either welded or bolted into larger assemblies. Despite high wind loading requirements the overriding design focus was rigidity given the high accuracy requirements of the final instrument. Tubular steel was the material of choice for this application as it provided the right characteristics for the demanding specification.

The Meerkat structure is in no way a conventional steel structure. It essentially consists of a heavy centre section which is mounted on a pedestal and a set of unequal length trusses which radiate outwards from either side of the central section. These trusses are interconnected with lacing or braces to form the final complex support structure to which the dish elements are bolted.

PROJECT TEAM

Client:	General Dynamics- Satcom Technologies (USA)
Structural Engineer:	General Dynamics- Vertex Antennas (Germany)
Project Manager:	Tricom Structures/Robor Energy
Main Contractor:	Tricom Structures/Robor Energy
Steelwork Contractor:	Tricom Structures/Robor Energy
Structural Steel Detailer:	Tricom Structures/Robor Energy
Painting Contractor:	Joesa Painting

The structure is required to receive the highly accurate reflector panels which have a very small tolerance allowance. Given the amount of processing involved (welding, punching and machining) each element had to adhere to a self imposed 'zero tolerance' policy to allow for the ultimate accuracy of the fully assembled structure. This was only achievable by the use of specially designed and manufactured jigs.

Each of the first five units had different jigging systems as these were improved on each time. The final systems now obtain the tight tolerances required by the reflector dish installers and no modification is required on site to ensure final fit.

Strict and sometimes unreasonable quality control played a very important role in achieving these tight tolerances; careful checking of all incoming parts before welding was paramount. An external quality auditor was appointed by the client to vet each stage of the production process.

The design included many structural node points with numerous connections working through the node intersections. As the structure was to be made up with hollow steel tubing, solid bars and flat plate connections, the node points became nightmarish web-like structures. The client insisted that all force lines had to go through a common point at each node. No eccentricities were allowed.

It was decided to create assembly jigs for each of the 200 nodes. These allowed for positioning of the node components which are then tacked in place. After assembly, the node is removed from the jig and welded. The completed and re-checked nodes are then assembled into the truss members. Each truss has its own assembly jig which is also calibrated by laser positioning devices.

Despite the complexity, deadlines had to be met with no compromise on the quality. The original order was to comply with AWS D1.1 for the welding procedures, but the paint warranty required defect-free welds which placed a huge demand on the welding techniques and QC processes.

The complex and strict painting requirements also proved challenging and even the transportation required specially designed cradles. The design and fabrication teams were tested to their limits but always managed to pick themselves up and continue.

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Plasma Table

Medupi Power Station

Python X

Medupi Power Station

- Offers an in-house detailing and architectural studio to assist customers from the early design stages right up to the final construction of their steel construction project.
- Works with a variety of roofing solutions, from small portal frame-type structures, through to 60-metre-span lattice girder designs.
- Mainly serves the commercial and industrial markets, with smaller contracts in the domestic market.
- Exports its solutions to various African countries – including Angola, Mozambique, Malawi, the Democratic Republic of Congo, and Swaziland.

Midvaal Structures specialise in the cost effective building of steel structures for churches, factories, warehouses, hangars, shopping centres and offices.

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www.steelstructures.co.za
Email: rina@steelstructures.co.za

Riversands Incubation Hub Amphitheatre

The amphitheatre structure in the Hub stands out from the rest of the campus with its unique shape and exposed tubular steel roof support structure. It is situated in the centre of the facility and can be seen from most of the buildings and external areas.

The Riversands Incubation Hub is located in the heart of the new Riversands Commercial Park and is a partnership between Century Property Developments and The Jobs Fund. The project has the potential to transform the socio-economic environment of the nearby Diepsloot community.

The Hub's incubation programme nurtures small and micro enterprises (SMEs) – principally, but not exclusively from Diepsloot – by mentoring and supporting them to become fully fledged, formal businesses. Emphasis is on SMEs which fulfil a real corporate or business market demand.

The goal is to attract SMEs that will provide goods and services at quality and price levels that make them an asset to any company supply chain. In addition to the study centre, artisan training facilities and business support services, there are 150 mini factories, retail spaces, office spaces, a horticultural and landscaping training space

PROJECT TEAM

Client:	Century Property Developments (Pty) Ltd
Architect:	Clidet No. 69 (Pty) Ltd
Structural Engineer:	C-Plan (Pty) Ltd
Contact person:	Lieschen Stander
Quantity Surveyor:	Bain & Heyns cc
Project Manager:	Century Property Developments (Pty) Ltd
Main Contractor:	GD Irons
Steelwork Contractor:	Tass Engineering (Pty) Ltd
Corrosion Specialist:	Dram Industrial Painting Contractors

and a 10 000 seat amphitheatre. Parts of the Hub will be accessible to the public with a user friendly atmosphere linking the end user of retail products to the producers based at the Hub. These spaces provide an integrated manufacturing, training, commercial and retail environment in which SMEs have ample opportunity to learn and trade, therefore functioning as an on site, and practical business university.

The amphitheatre structure in the Hub stands out from the rest of the campus with its unique shape and exposed tubular steel roof support structure. It is situated in the centre of the facility and can be seen from most of the buildings and external areas.

The amphitheatre roof structure is 45m long and has a width of 15m with a front facing overhang of 5 metres, mostly consisting of circular hollow sections. It was designed so that the trusses could be manufactured in three segments and assembled on site. The steelwork fabrication process in the workshop coincided with the on-site civil work, so that the steel structure could be erected as soon as the civil work was done.

With the exception of the purlins, all the components are circular hollow sections. The curved intersections and slopes of the roof structure provided the engineers with quite a challenge to design and detail the structure. They had to complete the design inputs manually before applying the design software to ensure that the connections between trusses, nodes and rafters were all correct. All tubular and other steel materials had to be specially shaped and cut to form the curved trusses. Even the side cladding could not just be standard sheet metal or facia board. A 450 x 100 x 20 x 3.0 cold formed lipped channel was created to achieve optimal strength and appearance.

TASS Engineering has been actively involved in structural and architectural steel fabrication and erection for more than four decades.

Current projects:

- Eastgate Refurbishment (1 350t) - Liberty Properties
- 1st Ave Warehouse, Longlakes (675t) - Capital Property Fund
- Warehouse Columbia Pharmaceuticals (250t)
- Menlyn Maine Central Square (250t) - Menlyn Maine Investment Holdings
- Fourways Bungee Tower and Sky Bar - Play at Height
- Nelson Mandela Square refurbishment - Liberty Properties
- Warehouse extension (250t) - ABI Devland
- Frankenwald Warehouse Extension (200t) - Capital Property Fund
- Mall of Africa Central Skylight, Bifurcated Columns (215t) - Novum Holdings
- Modderfontein Private Hospital (120t) - Group Five
- South African Breweries, Conveyors, Buildings, Stairs (120t) - SAB Alrode
- Stryker and Hilti Warehouses (120t) - Stryker and Hilti
- New Studios and Walkways (120t) - Sasani Studios

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Lessons from Spencer's Voortman visit – Part III

Numerically controlled machines – *the* MORE *sophisticated range*

By Spencer Erling, Education Director, SAISC

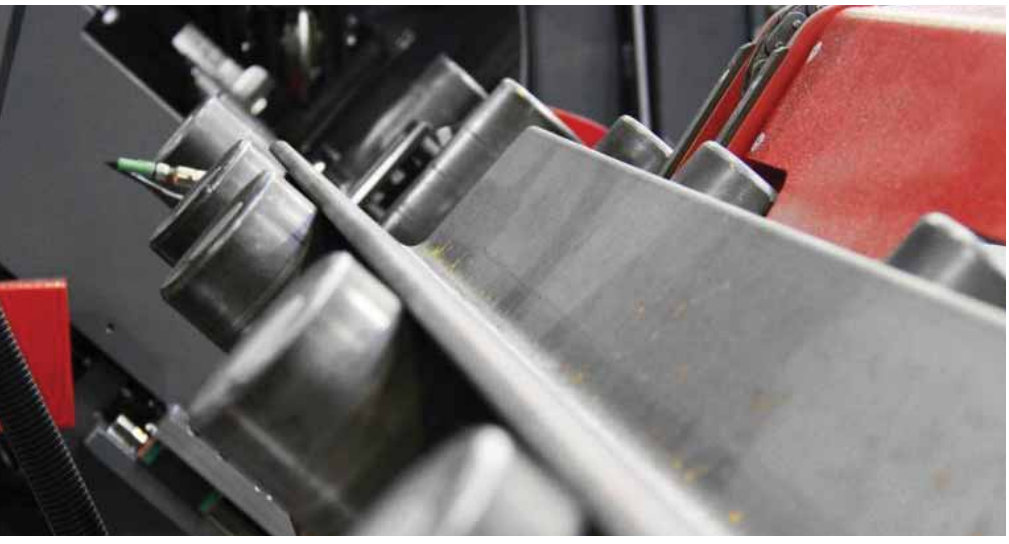
Voortman recently paid for Spencer to visit their factory in Holland as well as a Dutch fabricator and a German fabricator. This is the last of a series of three articles to share my findings with our members. My grateful thanks go out to the Voortman team and their SA representative First Cut for making this eye opening trip possible.

In this article we look at the sophisticated equipment on offer from Voortman. Hopefully you have seen the previous article in Steel Construction Vol. 39 No. 2 2015 where we wrote about the entry level range of equipment from Voortman. If you missed it you can find a copy on www.saisc.co.za. If you are interested only in the really sophisticated new developments, you may want to jump to the section headed: ***The exciting new stuff.***

In the previous article we did some numbers as to potential savings by going the NC route. Calculating potential savings and payback period would be along the same lines but taking the bigger annual production into account.

Beam drilling and sawing

The V630 machines come in two models based on maximum width (1000 and 1250). Each axis has its own drill and automatic tool changer (five options per axis i.e. one for each of the flanges and one for the web). As with all their drills, it has a 40mm maximum hole capacity, high speed carbide drilling, centre point marking, tapping and countersinking ability. Optional extras include layout marking; numbering; feeder truck or roller feed measuring systems, and of course are at least two to three times as fast as the



ABOVE: Beam cambering V2000 – The machines have motor driven rolls for feeding the beams into the machines.

LEFT: There is a specialist model for those fabricators who specialise in tower manufacturing – the V505.

entry level machines. Drilling machines are usually set up before the sawing machines, which models were described previously.

Beam marking V704

Relatively speaking, beam marking is a new development. Voortman also offers a standalone beam marking machine which would be used in conjunction with older model drills or for increased capacity.

Marking on all four sides is possible with milling heads, offering full or partial contour marking which is still visible after shot blasting.

Beam cambering V2000

For those of us who have operated in the multi-storey steel framed structures arena, we know that beam cambering is an essential requirement to enable (pre-) cambering floor beams so that when all dead load has been applied the (composite) concrete floor will be level.

I have seen many variations in the past of the basic concept of a horizontal hydraulic ram and two movable anvils with the settings for pre-cambering dimensions per beam size. These dimensions were totally dependent upon the hit or miss efforts in the past to create historical records of the settings required. Sadly of course these historical records were usually stored in the brains of the machine operators, and were lost on retirement or disappearance of the said operator.

Voortman has come up with two models (based on the capacity of the hydraulic ram) for 200 and 400 tons. But in this instance the historical records are replaced with a PLC control which has the option of a remote control. The machines have motor driven rolls for feeding the beams into the machines (no crane necessary – much lower handling costs).

Plate drilling and cutting

We previously looked at stand-alone plate cutting (V304) and drilling (V200) as well as a combined plate drilling and cutting (V320) machines. In the case of the latter machine the machine had one gantry with cutting in front of the girder and drilling at the back of the girder.

The 'one-step-above' machine with increased through-put capacity has two gantries with one for cutting (plasma and oxy fuel) and the second gantry for the drilling head. Optional extras include automatic plate handling with lifting magnets and marking by plasma or milling.

Punching and shearing

There is a specialist model, the V505, for those fabricators who specialise in tower manufacturing which comes in two models – one for angles up to 160 x 160, and the second for angles up to 250 x 250. *I am sure some of our designers could do wonders for their designs if these big angles were available in SA!*

The machines have optional punching heads and or drilling heads (for those angles too thick to punch) with high speed carbide drills. Thread tapping and countersinking are available as well as a shearing head. The machines have automatic in-feeds and use feeder truck measuring systems. Numbering systems built in or stand alone are possible (V70).

The exciting new STUFF

ABOVE: The V3100 is a great concept for storage and easy access of 6 metre lengths of flat bars and angles.

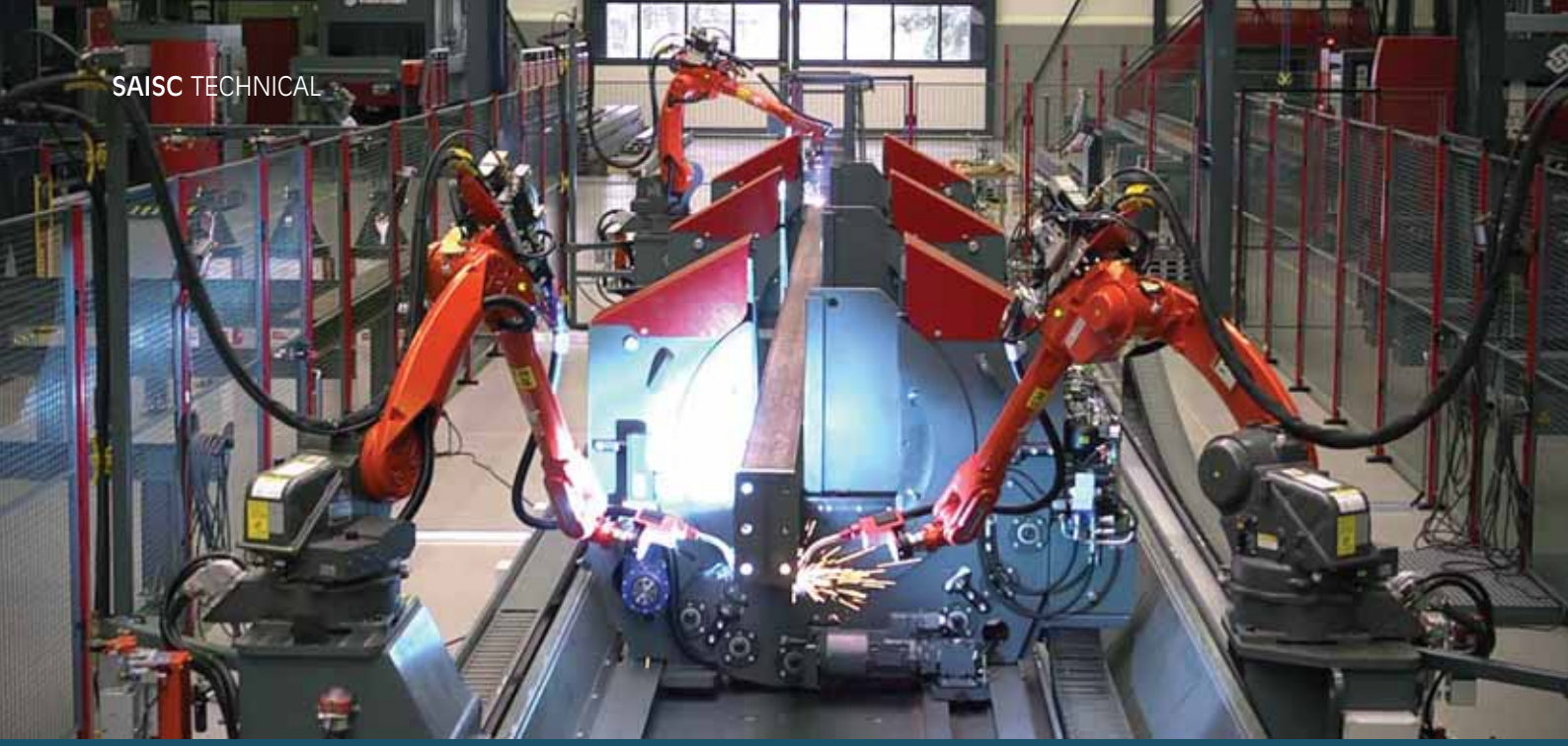
Flat and angle storage **(V3100)**. No, this is not a machine, well I guess it is of sorts, but it is a great concept for storage and easy access of 6 metre lengths of flat bars and angles.

One of my earliest recollections of an accident at the fabrication works that I witnessed occurred when loading angle irons into a 'Christmas tree-like' storage rack system. Labourers were pushing small angles into the storage rack which had a series of arms to support the angles. One of the labourers was at the end of the angle pushing it in when the angle snagged and he thumped his stomach on the angle.

That is definitely not a danger in Voortman's V3100 storage system.

It consists of a series (7) of bins each 6300 long x 2320 wide internally allowing for small piles of flats to be stacked next to each other. The draws are opened using electro motors and the flats are removed by electro magnets suspended from the cranes. What another great and simple concept idea.

In the last article I commented "there does not seem to be a one off machine "does it all" solution available from Voortman". In fact, there is at least one that cuts holes and shapes in three dimensions.



NEW STUFF

It is euphemistically called...

Beam coping

Do you want one machine that is capable of cutting every 3D shape possible and put in the holing, prep for welding etc. into beams, angles, plates and other shape?

Well as long as your profile fits into a 500 x 1 250 mm range then you must have a close look at the Voortman **V808** coping machine. The description coping really does not do justice to the machines capability.

This eight-axis, industrial robot with a plasma head will do the notches at the ends of floor beams; it will cut the beam to length; shape and put in all the holes (both holes for bolts and any other reasons), will mark using plasma for attachments and numbering. It comes with a roller feed measuring system.

What a fascinating machine to see in action!

The *pièce de résistance*

Yes, this most definitely is the future: Robots to do all the work of assemblers and welders.

Assembling and welding – The Fabricator

Much to my disappointment I had to leave just when this machine of the future was about to be displayed.

Just imagine it, a machine

- ✓ which has an inbuilt shuttle and beam rotator;
- ✓ that has a series of robots to handle plates up to 75 kg each;
- ✓ hydraulic presses to position the plates accurately and three robots with welding heads that automatically feeds material in and out using an automated crane built into the system;
- ✓ processes all four sides of a beam;
- ✓ handles plates automatically;
- ✓ tacks and fully welds and even automatically cleans the welding torch...

...and if that is not enough it can be integrated into a saw cutting, drilling, plate cutting, holing and any other Voortman machine you use or need to make a totally automatically assembler and welder of beams.

The thought is mind boggling; the fact is it is now a reality.

My wildest imagination and dreams have come true!

TOP AND ABOVE RIGHT: Voortman 'Robotics" – this most definitely is the future – robots to do all the work of assemblers and welders.

ABOVE LEFT: The Voortman V808 coping machine is capable of cutting every 3D shape possible and put in the holing, prep for welding etc. into beams, angles, plates and other shapes.

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See all the Steel Awards 2015 Entries - choose which one you like best and let us know

RED BOOK Errata updated

The Errata of The Southern African Steel Construction Handbook - 8th Edition (Red Book) has been updated and can be downloaded from the SAISC website. Go to www.saisc.co.za - Publications - Errata - Red Book Errata 18 May 2015 or contact Debbie Allcock at debbie@saisc.co.za

Visit the The Southern African Metal Cladding and Roof Association (SAMCRA)'s website! www.samcra.co.za

MAIN PICTURE: The gravity defying curved walls might have given the engineers a headache but definitely add to the aesthetically pleasing look of the buildings.

BELOW: The popular Fire & Ice Protea Hotel's facade clad in the LSF-Etics system

OPPOSITE PAGE: Light steel framing makes it possible to extend walls past the concrete structure framework, which allows the architect great design flexibility.

LSF-ETICS Facades used for FIRE & ICE

Summit Place is a mixed-use development consisting of five office buildings and a Protea Fire & Ice Hotel, including further proposed motor dealership opportunities. The development overlooks the N1 Highway and Garsfontein Road, making it unrivalled in its visibility in the Menlyn corporate node in Pretoria. The sweeping, iconic buildings have a specific but nevertheless subtle identity that leaves a lasting impression on passers-by.

The design of the Summit Place development aims to integrate the physical, social and environmental context of the corporate area to form an appropriate architectural response. The architects succeeded in this by creating a flexible development, ensuring a structure that can respond and adapt to changing requirements easily.

The project incorporates energy efficiency principles to ensure the urban environment is integrated with the natural environment. The use of indigenous vegetation and green spaces on street and roof level reintroduces a natural biodiversity for wildlife and ultimately creates a human-friendly environment within an urban centre.

The client will in future benefit from the excellent insulating properties of the facades with lower energy consumption. The finished product also provides a long life span with low maintenance due to the durable external finish.

The entire external facade surface of the buildings in Phase 1 is 8 352m², for which 42 tons of light steel framing was supplied by Clotan Steel.

The most challenging aspects for the design engineer presented itself in the leaning walls featured on the eastern side of one of the buildings; the large wing walls on the two other office developments as well as the gravity defying curved walls on all three buildings. Hot rolled sections were used to stiffen and strengthen the LSF in certain critical positions. The light steel element in the facade system allows for strength to resist wind loadings and is easy to fix against the main structure with steel brackets and mechanical anchors.

What sets this project apart from the surrounding corporate buildings is the proof of the versatility, high quality finishing and commercial application of LSF-ETICS facades in large commercial projects.

The application of the LSF and ETICS building system for facades of corporate buildings has grown tremendously since first acknowledged in the LSFB/ Architectural Category Steel Award s winner of 2012. Its advantages have clearly convinced engineers and developers alike and gave architects a material to express their creativity with ease and more daring.

Here is one such application of the numerous ETICS-type entries we received for Steel Awards 2015.

PROJECT TEAM

Client:
Neotrend (Summit Place) and Protea Hotels/ Marriot (Fire & Ice)

Architect:
Boogertman + Partners Architects (Summit Place) and Etienne De Beer Architects (Fire & Ice)

Structural Engineer:
Hage Project & Consulting Engineers (Pty) Ltd

Main Contractor:
GD Irons

Steelwork Contractor:
Ohlhorst LBS

Cladding Supplier:
Weber St Gobain

Cladding Erector:
Ohlhorst LBS

Light Steel Frame Supplier:
Clotan Steel

Photographer:
Clene van Wyk, CSE Ingenieurs

To achieve these objectives and provide possibilities for clean, straight lines, curved facades, leaning walls, wing walls and projected bands, the best choice for a facade system was obvious – a light steel framed structure with internal boarding and ETICs external cladding.

The benefits of the combined light steel frame and ETICs system are well known to the architects, as they have in the past already won accolades for the Deloitte Head Office in Pretoria (the Steel Awards 2012 LSF/Architectural Category Winner) where the same system was applied. Light steel framing makes it possible to extend walls past the concrete structure framework, which allows the architect enormous design flexibility. Other benefits include: accurate installation parameters; improved timelines; less space needed for material storage on a compact site, and less wastage and rubble that may be detrimental to a sensitive natural environment as well as unnecessary clutter on the site.

sasfa
SOUTHERN AFRICAN LIGHT STEEL FRAME BUILDING ASSOCIATION
www.sasfa.co.za

Sealtight Vaal – LWS Mini Warehouse

Little Africa – Parys Farm House

Mediclinic Midstream, Centurion

Steel Awards 2015

Light Steel Framing Entries

Sasol Chemcity – Incubation Facilities and Main Incubator Office Building

Summit Place and Protea Fire & Ice Hotel

Campsbay Extension

Hartenbos Apartment Revamp

The market and various applications for LSF just keep growing. This year the category received a record number of entries ranging from complete houses, extensions, roof construction and facades of office buildings.

Langebaan Double Storey

Lenasia

Rand Park Ridge

SA Army

Valhalla Park

Riversands Incubation Hub, Diepsloot

Lady Pohamba Private Hospital – Windhoek

Anistemi Retirement Village (House 3735)

Northgate Shopping Centre Extension

Kuruman Casino Facade

Emergency ECDC – ACM Project –
Nobuhle Junior Secondary School

House Badenhorst

Belmoral Lodge

Burger King Norwood

Clifton Extension

Copperleaf 1

Far Hills Estate

Fresnaye Double Storey

Houtbay Harbour House

KFC Umtata

Lynwood

McDonald's Plumstead

Mooi City

Waterfall Estate, Johannesburg

Fresnaye 3 Storey

Smokey Grove

CALENDAR OF *Events*

JUNE

11	Breakfast talk and mini exhibition on new developments for fabricators, Johannesburg
22	POLASA Industry meeting, Johannesburg

JULY

02	DTI/SARS delegation visit to Kusile Power Station
06 – 11	SASFA Builders course, Johannesburg
20 – 21	Steel Enlightenment course at the University of KZN
15	SAISC Council Meeting, Johannesburg

AUGUST

14	SAMCRA workshop for architects
26 Aug – 04 Sept	Sophia Gray Congress / Visiting architect

SEPTEMBER

03	Steel Awards (Gauteng) - Emperors Palace
03	Steel Awards (Western Cape) - Table Bay Hotel
03	Steel Awards (KZN) - Mount Edgecombe Country Club
07 – 11	Post-graduate steel course, UCT
14 – 19	SASFA Builders course, Cape Town

OCTOBER

15	**Steel Day** including a Breakfast Talk
22 – 23	SASFA Code & Engineering course, Johannesburg
26 – 27	SASFA Code & Engineering course, Durban
29 – 30	SASFA Code & Engineering course, Cape Town

NOVEMBER

09	POLASA AGM and Industry meeting, Johannesburg
12	SAISC and other subsidiaries AGM and cocktail function

We would like to highlight the following important event – diarise it now before you miss out on booking in time.

STEEL AWARDS 2015

• Awards dinner in Johannesburg / Durban / Cape Town: 3 September

For information contact: marle@saisc.co.za

ENQUIRIES:

EVENTS: marle@siasc.co.za COURSES: pamella@saisc.co.za
SASFA: john.barnard@saol.com POLASA: kobus@saisc.co.za
SAMCRA: dennis@saisc.co.za

SAISC SCHOOL OF DRAUGHTING

KRU Detailing – Upskilling their detailers

By Jenny Claassens, Office Manager, SAISC School of Draughting

Over and above their continuous in-house training, the staff of KRU Detailing are currently busy with the National Diploma Structural Steelwork Detailing short courses offered by SAISC School of Draughting.

It is very important for Johann Strauss, Managing Director of KRU Detailing to assist his staff with their growth, professional and career development. He does this by providing opportunities for them to develop their knowledge, skills, abilities, and resources.

Over and above their continuous in-house training, the staff of KRU Detailing are currently busy with the National Diploma Structural Steelwork Detailing short courses offered by SAISC School of Draughting.

Johan has recognised that there is a great return on investment to have well trained staff. He encourages and motivates them to be productive, which is their route to a successful career and a successful company.

About the SAISC School of Draughting skills programmes:

Skills programmes are short courses (1 day, a week, a month, etc.), consisting of either one or more unit standards of the National Diploma Structural Steelwork Detailing, allowing detailers in the industry to obtain the qualification or upgrading their skills and knowledge in certain areas of detailing.

With a skills programme, a learner (or a group of learners from a company) can get training in a group of unit standards, instead of having to complete an entire qualification as in the case of a Learnership. The exit points of skills programmes are in most instances prescribed by the needs of the learners/companies.

A learner would be able to choose the unit standards or modules that make sense to him or her whilst gradually developing a qualification or sharpening their skills.

We are able to customise the programme specifically to a company's need.

By passing the unit standards chosen and needed together with a Recognition of Prior Learning program can lead to the award of the National Diploma.

About KRU Detailing

KRU Detailing commenced trading in September 2002 and has since been involved in the detailing of mining, commercial and architectural structures. They pride themselves in producing an accurate product at an affordable rate and to reliable deadlines. They have detailed projects from 2 to 2 200 tons ranging from light floors to curved shopping centre roof trusses and mining structures. Depending on the nature of the steelwork, their current capacity is between 500 and 1 500 tons per month. They use Tekla Structures to model projects in a 3D environment.

www.steeldetailing.co.za
johann@kru.co.za

Please phone or e-mail Jenny Claassens for any enquiry or information on the SAISC School of Draughting on 011 876 2300 or e-mail jenny@saisc.co.za

ABOVE: The KRU Team (from left to right):
Front: Reynier Prinsloo, Corlia Strauss
Middle: Jean Lee, Erich Fuls, Philip Swanepoel, Baboloki Serebale
Back: Shaun Oelofse, Mitch Niemand, Johan Strauss and Roelf from SAISC School of Draughting

Launch of the ASSD

The Association of Structural Steel Draughtsman

13 May 2015, Genesis Conference Centre JHB

Are you a structural steel detail and or layout draughtsman?

Are you interested in uplifting your qualification and the structural steel draughting profession as a whole?

Join the newly launched Association of Structural Steel Draughtsman (a division of the SAISC)

Cadex SA

TEKLA

Event Sponsor: Cadex Systems SA

The ASSD was recently officially launched and well attended by the Industry and members of the detailing fraternity.

The structural steel detailing profession in South Africa is unregulated as there are no statutory pre-requisite qualifications or training obligations needed to become a detailer. To this end, anyone can call themselves a structural steel detailer.

The SAISC as well as many industry stakeholders have, over the years, tried to develop the relevant knowledge and skills by providing apprenticeships, courses, publications and more recently offering more short courses to obtain the National Diploma in Structural Steel Detailing at the SAISC School of Draughting. Despite these efforts by the SAISC and other industry stakeholders, there are still many 'fly by night detailers' tarnishing the reputation of the detailing profession.

The SAISC together with the Industry has identified the need to uplift the profession and decided to form an association under the umbrella of the SAISC.

BELOW: ASSD Committee, from left: Spencer Erling, John Duncan, Heather Salinger, John Swallow, Roelf Lizemore, Paolo Trinchero, Howard Fox, Tommy Mulherron, Albert Hafkamp and Gino Pollastrini.

OPPOSITE PAGE: Seen at the ASSD launch.

The ASSD is still in its infancy and the founding committee has put together a concept constitution, which we hope with your feedback and input will become industry standards for the structural draughting industry.

This article only touches on its aims and objectives and highlights the benefits of joining the Association. For the complete document please contact Albert Hafkamp, at alberthafkamp@gmail.com.

Aims and Objectives

The aim of the ASSD is, by careful screening of the applicants, to differentiate between the 'fly by night detailers' and the bona-fide professionals:

Its objectives are:

a) Provide an association where detail Draughtspersons can interact and do what is necessary to achieve the objectives herein.

b) Improve the academic and technical qualifications of structural steel Draughtspersons and to improve the knowledge, expertise and competence of existing Draughtspersons through a programme for the recognition of prior learning (RPL).

c) Advance the image and status of the profession within the steel construction industry, consulting engineers operating in the discipline of steel structures and in the greater industry where applicable.

d) Offer courses as well as learnerships.

e) Develop and establish a code of ethics to ensure honesty and integrity amongst its members.

f) Promote the National Diploma in Structural Steel Detailing and the recognition of persons with the qualification.

g) Promote the concept of a specialist steel detailer by means of various grades of membership.

h) Develop and adopt a set of generic templates for the detailing profession including: Quotation for Detailing; Conditions of Sale: Compensation events; Change orders; How to deal with revisions and late/incomplete information; Request for information (RFI).

i) Facilitate employment and training opportunities for previously disadvantaged persons.

j) Not to act as a trade union, nor an employment agency.

Advantages of becoming a member of the ASSD (a division of the SAISC)

1. Membership of ASSD would attract the same membership benefits in terms of cost of courses and books would be available at SAISC member prices.

2. Help your colleagues to uplift the status of the structural steel draughting profession.

3. Have access to Recognition of Prior Learning (RPL) assessment and training to enable you to lift your education and training up to the level of and receipt of the National Diploma in Structural Steel Detailing.

4. Have a contribution to and access thereafter to a set of national standards and standardised conditions of doing business (especially for the smaller detailing firms).

5. Open up the opportunity to network with members of your profession, both at social gatherings and technical meetings aimed directly at the profession.

6. The more you put into the Association, the more you will get out of it, find out how this happens by getting involved.

7. Get on to the direct SAISC mailing lists to keep you up to date on what's happening in the industry by way of events, courses and news snippets.

ASSD Membership Enquiries: Please email Tiana Ferreira at tiana@saisc.co.za.

ASSD Logo Design Competition

In the invitation to the ASSD launch a prize was offered to detailers to send suggestions for a logo for this new division of the SAISC. Thank you to all who gave the concept some thought and creative energy.

At the launch, a poll was conducted among the approximately 80 participants. The following variant on a concept submitted by Alan van Pletzen of BSM Baker received the most votes and has subsequently been adopted as the ASSD logo (at least provisionally).

ASSD
ASSOCIATION OF STRUCTURAL STEEL DRAUGHTSMAN

Acknowledgement

SAISC thanks the staff of our School of Draughting for assisting with preparation and hosting of the launch. We also proudly recognise the very meaningful support of the event sponsor, Cadex Systems SA, in getting this association on the road.

SOCIAL SNIPPETS

By Marlé Lötter, Events Manager, SAISC

SAISC Golf Day – Johannesburg

Royal Johannesburg and Kensington Golf Club, 6 May 2015

The SAISC Golf Day 2015 was hosted on 6 May on the West Course of The Royal Johannesburg and Kensington Golf Club on a particularly beautiful autumn day with bright sunshine and good light until the end of play for all 37 teams.

It was also a great networking opportunity – among the 152 players, at least 79 companies were represented, all of them role players in the construction and structural steel industry.

The trophy was won by the team of Tudor Engineering, scoring 97 with host Braam Beukes – CONGRATULATIONS, Team Tudor!

Full results:

Winning team: Tudor Engineering – Braam Beukes (Host), Shaun Diggeden, Johan du Plessis and Tobie Oosthuizen (Score: 97)

2nd place: Macsteel Trading – Clive Hammond (Host), Tyral Hendricks, Sean Fourie, Wally Wessels (Score: 94)

3rd place: Macsteel Service Centres – Dave Dawkshas (Host), Stephan Burger, Nigel Provis, Michael Louw (Score: 94) – Prizes sponsored by SSAB South Africa

4th place: Louwill Engineering – Juan Sliep (Host), Ruhan Myburgh, Henry Joubert, Theo Willemstijn (Score: 91)

5th place: Aveng Steel – Leon Lotz (Host), Francois de Kock, Morne Jacobs, Clinton Winot (Score: 90) – Prizes sponsored by EVRAZ Highveld Steel and Vanadium

6th place: Macsteel Coil Processing – Trevor Cooke (Host), Colin Dallas, Dirk Steinberg, Rod Cory (Score: 89)

Best individual score: Tobie Oosthuizen, Tudor Engineering team – Score: 48

Nearest-to-pin on 5th: Glen Budler, Robor Industrial Solutions team – Prize sponsored by ArcelorMittal SA

Nearest-to-pin on 16th: Ettienne de Wet, Global Roofing Solutions team

Longest drive on 7th: Ernie Amos, Steel Services team

Longest drive on 18th: Clinton Winot, igen Africa Services team – Prize sponsored by Macsteel

Above: The SAISC 2015 Golf Day champions – Tudor Engineering! From left: Paolo Trinchero (SAISC CEO) with Tobie Oosthuizen, Braam Beukes (team host), Paul du Plessis and Shaun Diggeden

Institute members and the Industry enjoying the good weather, company of their peers and last but not least GOLF!

THE SAISC PROUDLY ACKNOWLEDGES THE 2015 GOLF DAY SPONSORS:

Macsteel (main event sponsor), ArcelorMittal SA, EVRAZ Highveld Steel & Vanadium, Genrec, Robor, SA Roofing, SSAB and Vital Engineering – Thank you for your loyal support!

Contact Marlé Lötter for more event pictures, marle@saisc.co.za

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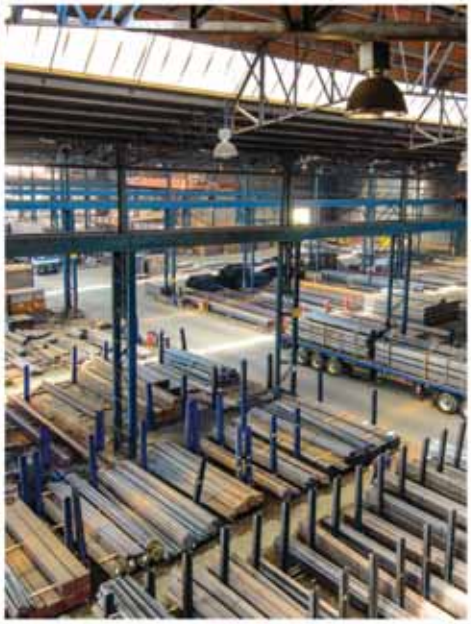

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