SILENCE
BY HUSQVARNA
A quieter and greener future with battery
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The first remark made by everyone I spoke to who attended the event was that it was “political”. This is understandable, given the need for accelerating transformation in the sector. At the same time, it was a state-owned conference organised by a state-owned enterprise, and as expected, the many high-ranking deputy ministers and their department heads had a lot to say. Unfortunately, there seems to be a fair amount of misunderstanding of information, statistics and interpretations of the statistics in these circles.

For example, a senior Safcol representative recently announced that foresters and sawmillers are recovering less than 30% of their raw materials. This may be true in rural areas where some bush millers don’t have the knowledge and technology to extract more from their trees, but the reality is that no sustainable business can exist today without maximising the returns from both, its raw materials and its production processes. The true facts and figures and how to interpret them are available from Forestry SA and Sawmilling SA.

It is important to remember that adding value to the final product starts in the forest, and it is a travesty when a sawmill, such as Safcol’s Timbadola, is not able to operate profitably for more than six months because of an inability to finalise transport contracts with suppliers.

Each industry in our sector, from the growing of trees and reworking the residues back into the soil to nurture the next crop, to the utilisation of every part of the tree in our sawmills, pulp and paper and board processing plants, and the use of timber and timber derived products in the building of our homes and everyday lives is already a well-orchestrated “industrialised” value chain. Continuous improvements brought about by modernisation, lean manufacturing thinking, investment in skills development and the embracing of the world wide move to research and develop new ways of extracting and using biomass, have been and are, the main drivers of this competitive and wealth-generating sector.
CMO restructures and expands its value-adding services

Michael Brink, chief executive officer of the newly formed CMO Group, reports that the company is now generating a significant part of its annual turnover from international business outside South Africa and Swaziland, and this has necessitated a strategic restructuring process to align its current business model with its client demographics.

In future the organisation’s business activities will be run by two entities, CMO South Africa and CMO International, which report to the CMO Group under the leadership of Brink.

CMO South Africa
Ben Potgieter is the managing director of CMO South Africa (MD:SA). The head office is in Pietermaritzburg, with support provided by the office in Barberton under the leadership and guidance of the MD:SA. Regional managers will be replaced by subject matter experts (SMEs) in the core areas of business, subject matter facilitators (SMFs) who report to an SME, and key client facilitators (KCFs) for all clients who have signed long term contracts with CMO.

There will be regional representatives outside of South Africa and Swaziland, and the only exception is the Southern Region (Cape Region, South Africa), which remains in place for the foreseeable future.

CMO International
Andrew Mc Ewan will take up the role of managing director of international business affairs (MD:IBA), which excludes South Africa and Swaziland. Andrew’s responsibilities include managing the services of Rudolph Hoffman who will be overseeing CMO interests in East Africa. The same SMEs and SMFs will serve international clients, with a dotted line to the MD:IBA. Mc Ewan will also be responsible for overseeing KCFs for all clients who have signed long-term contracts with CMO.

Brink says the details regarding the appointments of the subject matter experts and facilitators will be communicated in the near future.

CMO will continue to focus on improving the performance of their clients’ forestry operations through its key areas of expertise, which are:
- Fire management
- Forest engineering (harvesting, roads and transport)
- Forest conformance systems (legality and FSC)
- Supervision in forestry
- Silviculture
- Software solutions based on BeHave, PerForm and GroupScheme

“We believe we are best at providing assessments to you as our client base and highlighting weaknesses through the powerful analytics tools that we have developed. Even when we provide consulting services, we will mostly first assess the status/condition of the client prior to suggesting solutions,” explains Brink.

“Where we do provide training, it will only be to offer either basic training for new entrants in a particular discipline or to provide gap training to improve individuals where assessments have shown weaknesses. We stay away from the old school thinking of broad brush “refresher training” just to issue a certificate to show compliance.”

Rudi Hoffman joins CMO

Rudolph (Rudi) Hoffman is the new East Africa Representative for CMO. Rudi is a Zimbabwean National, but is now based in Kampala, Uganda. He will be working with CMO to strengthen its presence in the East African market and will provide additional capacity on other assignments as and when required.

Rudi is an experienced forestry manager educated at the Zimbabwe College of Forestry and he obtained a BTech degree from the Nelson Mandela University (Saasveld). He has worked as a senior management forester for Border Timbers in Zimbabwe and he has been with the New Forests Company in Uganda for five years, with his last position being the Uganda forestry manager.
By 2030, the world’s green spaces, including parks, gardens and forests, will be more important than ever. They will help improve air and water quality, reduce heatwaves, manage stormwater, increase biodiversity and produce sustainable energy.

This may sound like pie in the sky, but a global report on Urban Parks 2030, the result of a survey involving more than 500 landscaping architect students in 15 countries from 60 universities, unveils some extraordinary visions.

Husqvarna, a world leader in outdoor power products, commissioned the survey to understand how decision-makers view the role of green spaces. This information is helping Husqvarna to develop solutions and products that meet the future needs for forests, parks and gardens development.

The respondents believe technical solutions will play a large role in the future. Most of them believe that robots, sensors and drones will play a vital part in maintenance work. Overall, they want future maintenance in our green spaces to be silent, non-intrusive, effective and sustainable.

“The need for nature spaces, where people can escape the frenzy, the hustle and bustle of modern living and relax in a soothing, peaceful environment, is becoming very important,” says Adrian Beaumont, country manager of Husqvarna South Africa. “In keeping with current and future trends, how we manage our outdoor areas, like urban parks, municipal grounds, hotels and game lodges, needs to change.”

An important part in reaching the sustainable, productive green spaces envisaged for 2030 is developing the right maintenance tools and solutions.

“It is from our vision for the future that the Silent Nature initiative has been born. This speaks to a new way of caring for parks, gardens and forests using battery and robotic tools with the performance and results of their petrol counterparts but with the quiet, clean convenience of long-lasting lithium-ion batteries,” explains Beaumont. “Silent Nature is just the first step of many in our journey towards a greener, quieter and more sustainable future.”

Quiet and cordless operations are the tools of tomorrow. With more than 328 years of innovation to its credit,
Husqvarna has long provided professionals with every forest, park and garden product they need. Its engineers had no problems devising a range of quieter, less intrusive, battery-powered solutions in keeping with this "more silent" philosophy.

These tools have all the necessary power and performance associated with petrol-driven power tools however they are quieter, cleaner, and more convenient to use thanks to long-lasting batteries. With no direct emissions, the handheld battery tools are also 100% smoke free.

Husqvarna’s products include a range of highly efficient battery-driven chainsaws, trimmers, brush cutters and blowers. They are driven by a powerful 36V Li-ion battery pack, which, when combined with a specially developed brushless motor, results in quiet, efficient and lightweight tools.

The company also offers battery-powered pole-saws for professional tree care users, which adds flexibility to the user’s operations and delivers excellent performance.

Julian Ortlepp, managing member/tree surgeon of TreeWorks, is an example of a Husqvarna customer who has been highly impressed, and completely bowled over by, Husqvarna’s battery-operated products.

Ortlepp, an entrepreneur and businessman who has dedicated his life to nurturing Johannesburg’s urban forests, says: “I have been using Husqvarna’s battery-operated chainsaws for several years now and have found them to be incredibly reliable and robust. The quietness of these tools has made it possible for us to work at schools, office parks and hospitals during normal working hours as there is no noise disturbance to speak of. My petrol costs have reduced significantly, too.”

He added: “I’ve been hugely impressed by Husqvarna’s battery-powered top-handle saws. These have been really amazing, giving us plenty of working hours with literally no maintenance.

The batteries last, keep their power, and offer us a fantastic alternative to petrol machines. I can highly recommend these machines to other tree professionals.”

Husqvarna is – justifiably – proud of its battery products. The lithium-ion batteries deliver unsurpassed, long-lasting power and are available in various capacities. “Our battery-powered motors offer the performance of petrol-powered engines, minus the noise, harmful emissions and fuel consumption,” says Beaumont. “They are tools that are wonderfully in sync with Husqvarna’s vision of a quieter, greener, tomorrow.”
From humble beginnings, J & B Timbers has grown its Swaziland based contract timber harvesting operations in a planned and systematic way through its belief in job creation by investing in manual labour and the selective use of machines to streamline its operations, leading to steady growth in a competitive market.

The company’s current labour force of 370 people fell and extract 9,000 tonnes of timber a month and equipment such as the Matriarch Skogger, helps the company meet its targets.

Barend Steenkamp, the fifth generation of Steenkamps in Swaziland, along with his father Jan, owns J & B Timbers. The family has for many years farmed in the Sicunusa area in the west of the country. They were some of the last farmers to close their dairy production and Barend, who has a tertiary qualification in agriculture, saw a gap in 2010 in the contract timber harvesting field.

“We started out on a small-scale felling 300 tonnes per month using one chainsaw and an agricultural tractor-trailer combination with all handling and loading done using manual labour from the Rocks area near our farm,” Barend says. “This was done for the Montigny timber group who later bought out all of Sappi’s forests in Swaziland.”

Over the next five years J & B Timbers’ operations showed steady growth and by 2015 the labour force had grown to 65 people. All felling, cross-cutting and loading was still being done by hand and at that time, Barend decided it was time to start mechanising.

“We found a used Bell 125 Logger on the open market and in our ignorance, had it repaired using freelance mechanics who installed pirate parts, which soon caused the machine to break down during critical production times,” he says. “We then contacted Charlie Boucher at Bell Equipment in Swaziland and despite it being close to Christmas of that year, we were warmly received as new customers of Bell Equipment and more importantly, had our Bell Logger repaired and back in production quickly. This was the start of a long-term relationship that has benefited us greatly.”

In March 2016 J & B Timbers bought its first new Bell 220A Teleboom Logger. “That machine made such a difference to our production as with two Bell Loggers we could now use one machine infield and another stacking timber at the roadside depot where it would also load timber onto trucks,” Barend adds. “Soon after this, our clients Montigny, who are also keen on job creation, doubled our monthly production from 2,500 tonnes to 5,000 tonnes as they saw in us the potential to grow and create more jobs.”

Some six months later, J & B Timbers took delivery of another new Bell 220A Teleboom Logger but replaced the Teleboom with a Crankboom, which has a higher reach and can be used to load timber onto larger trailers.

“We had been using the Matriarch 420 Timber Grab on our Bell Loggers and when our clients, Montigny, put out a contract in January 2017 harvest pine thinnings, we were naturally interested although we now faced a new challenge of extracting bigger timber,” Barend explains. “Charlie Boucher arranged for us to meet Ashley Bell, Matriarch Equipment’s marketing manager, and Derek Howe, Bell Equipment’s general manager: Forestry, Sugar and Agricultural Sales, to look at the Matriarch FASTfell and Skogger timber machines as viable solutions to our proposed thinnings harvesting.”
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After a trip to see the machines at work in forests in Tsitsikamma Barend decided that buying the Matriarch Skogger was the best way forward.

Their challenge was to get the felled timber to roadside and the Skogger, which can extract and stack the timber seemed the obvious choice. “A big advantage of the Skogger is that we believe it will work equally well in thinnings as well as clear fell operations where it will haul gum in longer lengths, such as that which is destined for transmission poles.”

J & B Timbers’s operators have taken to the Matriarch Skogger with ease. Barend ascribes this to the ease of handling in the machine’s design and with so many features he enthuses about. “First of all you have a low-revving engine and this in turn translates to fuel burn of around 7.2 litres an hour, which means lower cost per tonnes of timber handled; a big plus.

You then don’t have to pre-bunch the timber as the Skogger does that automatically with its delicate grab. That same grab has a built-in scale to prevent overloading and it further features a re-grab effect of which the frequency can be set, which means the timber is held firmly during the extraction and stacking processes. A floating boom also retards the grabbing action.”

Other features of the Matriarch Skogger include low temperatures on the hydraulic oil which leads to longer component life, no wheel slip due to differentials and a transfer box and self-straightening of the articulated turn feature once a change of direction has been completed. Barend believes that the weight-to-power ratio is perfect and this should lead to longer tyre life.

“We would not be at this point without the backing, advice and support we’ve enjoyed from Charlie and Nicolien Boucher at Bell Equipment in Swaziland,” Barend says. “We believe we’ve done our part by planning our cash flows and not growing too quickly. We’ve confidently entered into a maintenance agreement with Bell Swaziland and rely totally on the company’s expertise.”

Barend’s wife, Carmia, appreciates the challenges of the contract timber harvesting industry but her real passion lies with farming sheep. “From our first meeting, under the pressure that the festive season brings, Charlie and Nicolien have been eager to assist us,” she says. “We reward their commitment to our business by keeping our account with Bell Equipment paid up.”

Barend quotes a client who said of the Matriarch Skogger: “This machine is going to cause a revolution in the forestry industry” and we have reason to agree.”
NMU symposium reviews the causes and the aftermath of the Knysna fire

“Knysna fire – the causes, the fire, the aftermath and the future” was the topic of an industry symposium at the George campus of Nelson Mandela University (NMU) and featured an array of speakers who presented on the devastating Knysna fire from different professional and scientific perspectives.

“The intellectual depth of the discussions and the detailed information shared at the symposium was valued by stakeholders and presented an excellent learning opportunity for our BTech and postgraduate students who, together with industry, are increasingly being tasked to address vexing environmental challenges,” says Tiaan Pool, NMU programme co-ordinator for the Veldfire Management and Forestry Programmes offered at the George Campus.

The symposium was a precursor for the Veldfire Management Programme’s Academic Advisory Board meeting held the next day. Campus principal, Prof Quinton Johnson, welcomed the delegates at the symposium, saying that the university wants to play its role, along with other stakeholders, to conserve and rebuild the region.

NMU Mayor, Cllr Eleanore Bouw-Spies, who delivered her address via Skype, explained how the Category 5 Incident (most devastating) impacts on multiple levels of municipal service delivery, business, residents, animals and the environment. She emphasised the importance of collaboration and the need to now focus on the rebuilding of the town. The Garden Route Rebuild Initiative was mentioned as an example of the good work being done.

An operational overview of the origin, development and factors that contributed to the fire (drought, strong wind and vegetation), and where the fire was extinguished, was provided by Dirk Smit of the Southern Cape Fire Protection Association (SCFPA). Paul Bucholz, an environmental consultant who works closely with the SCFPA, described the rehabilitation processes, including measures to stabilise the soil to prevent erosion; and the control of alien growth. He said factors affecting the re-design of...
 infrastructure includes the choice of equipment and materials to improve the fire resistance properties of dwellings.

Willie Brink, planning officer for MTO, provided insight into the impact of the fire on commercial plantations which are a primary industry in the area. He said MTO and companies like PG Bison and AC Whitcher will be affected up to 2040 by when the industry is expected to normalise.

Len du Plessis, representing SANPARKS and SCFPA gave an account of the immense task that the emergency personnel and volunteers had in planning and operationalising the evacuation of people from homes, places and spaces that were in the fire line. He elaborated on the positive use of social media and touched on the severe trauma and emotions experienced by all affected by the disaster.

He also described the impact of the disaster on the natural environment, including damage to the soil and landscape, infrastructure such as sewage systems, and the challenge of disposing of building rubble, including toxic elements. He said the fire severely compromised the habitat of the animals, insects and birds, and he hoped that the breeding ground of the highly endangered Brenton Blue butterfly species has not been completely destroyed.

Lessons and strategies from the fire prone Free State farmlands, where wildfires annually destroy about 260 000 hectares of land were shared by Malcolm Procter, the deputy director, Regulation and Oversight of the Department of Agriculture, Forestry and Fisheries (DAFF) in the Free State.

He elaborated on a model used in the Free State where large areas of farmland/ veld are systematically demarcated into smaller zones of managed / farm units with a system guiding the “unit manager” to annually provide critical information about preventative measures that have been put in place to manage fire risk and to mitigate the effects of wildfire. A certificate of compliance issued by the department, after the relevant audits have been conducted, serves as a means of assessing the state of fire readiness, as an incentive for lower insurance premiums and provides some legal protection against claims after a fire.

Dechlan Pillay, the director: early warning and capability management from the National Disaster Management Centre (NDMC) who attended the symposium with the deputy director-general and head of the centre, Dr Mmaphaka Tau, gave a broad overview of the role of the centre in collecting data and identifying and analysing risk factors. This valuable information and data is shared with the relevant authorities locally, regionally and nationally for planning purposes and for the implementation of measures to prevent, mitigate and manage risk, including fire risk.

Poole says the symposium helped to set the agenda for the 12th Veldfire Management Symposium which will hosted at the George Campus of NMU 3 – 5 October

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WMU symposium reviews the causes and the aftermath of the Knysna fire
Second annual Agfo Expo a massive success

The second annual Agfo Expo was held at the Casterbridge Lifestyle Centre in White River from 14 to 16 September, providing a platform for service and equipment providers to the forestry and agricultural industries to show off their products to visiting farmers and foresters.

Building on the success of the 2016 edition of the show, organisers focused on the joint symbiosis and the joint interests of the forestry and agricultural sectors, while at the same time creating a fun family experience with lots of music and entertainment in the form of chainsaw, pit saw, wood chopping and strongman competitions, as well as a Bell driving competition, where participants had to drive a Bell logger.

There were 68 exhibitors, occupying 91 stands and representing over 80 brands, attracting visitors as far as China, Zambia and Uganda. Various exhibitors from last year exhibited again this year including Rudamans who increased their exhibition space from 120m² to 468m².

According to organizing committee member, Joey Lascelles, the majority of exhibitors reported excellent trade figures and sales leads and expressed their overall satisfaction with the show.

The list of exhibitors was very impressive and included everything from forestry machinery to tractor and implement manufacturers, tool and accessories suppliers, chemicals and fertilizers, financial institutions, water reservoirs, water purification, pumps, nurseries, oils and lubricants, sawmill manufacturers, mobile and stationary chippers, sawmilling machinery suppliers, firefighting equipment suppliers and services, academic institutions, saw blade and tooling manufacturers, structural timber and pole suppliers, workwear and PPE suppliers, and industry associations.

In addition to doing product demonstrations at their stands, exhibitors also were given the opportunity to demonstrate their products at the The AGFO Expo exhibitor’s arena.

Some very innovative new equipment was on display, including new battery operated hand tools for the forestry and agricultural industry, and it was refreshing to see some exhibitors expanding their product ranges into new markets.

Possibly the biggest presence at this year’s Agfo was Rudaman’s Nelspruit, who, at their numerous dedicated supplier stalls, displayed a wide range of solutions for the forestry and agricultural industries including PPE gear, chainsaws, chippers, and even some vehicles through their partnership with Husqvarna at the dedicated Husqvarna stand.

Representatives from Sunshine Seedlings at AGFO 2017
According to Rudamans owner Wayne Jackaman the Agfo Expo is an ideal platform for them as they are a local company, getting to showcase their products to the local agricultural and forestry communities.

The Agfo expo went hand in hand with the Agfo conference where an impressive range of speakers covered a wide range of topics including exchange rate risks, the effect of forest fires on agricultural farmers and many more.

With the first Agfo Expo last year having brought an amazing 2 million rand into the local economy, this year was set to be even bigger and better.

One of the favourite competitions among the spectators was the chain saw competition, which saw competitors from various companies taking to the Agfo Expo Arena to challenge their rivals and show off their chainsaw skills.

The novice section of this competition was dominated by Pieter from Lawn Star Cutting, who competed on behalf of Eviro Chainsaws. He was closely followed by Karel from Rudamans, who finished in second place, and Willie from Tomacat Chippers, also representing Eviro Chainsaws, in third place.

The 60cc standard class saw the team from Stihl South Africa, with Duncan and Brendan from Stihl South Africa taking first and second place respectively, and Marius from Enviro Chainsaws following hot on their heels finishing in third place.

Enviro Chainsaws, represented once again by Marius, took the win in the 73cc standard category, followed closely by Brendan from Stihl South Africa and Heinrich from Rudamans.

The 73cc modified category saw Duncan from Stihl South Africa take the win, with Bruce and Stephen from Rudamans finishing in second and third place respectively. Duncan also showed his mettle in the open modified category, taking the win for Stihl South Africa, and followed by Marius and Dave from Enviro Chainsaws in second and third place respectively.

Duncan was announced as the overall winner, having recorded the overall fastest average time in the competition.

The axe chopping competition also featured as one of the favourites among spectators at the AGFO Expo, with Dave from Enviro Chainsaws taking the overall win, followed by Hilton from Cruse Tree Services, who finished second.
Only 18 months in South Africa and already making a huge impact, firefighting solutions supplier Fogmaker exhibited at AGFO 2017, and their regular demonstrations proved to be a huge hit with crowds gathering around to see how the system extinguishes engine fires within seconds.

With over 130 000 systems installed globally, Fogmaker has proved itself to be a market leader in Europe.

A ground-breaking auger from STIHL

The STIHL BT 131 one-man auger is a professional-grade machine that features a fuel-efficient 1.4kW STIHL 4-MIX engine that delivers high torque at low RPM, plus a larger fuel tank than previous models for less frequent refuelling. STIHL Quickstop® auger brake technology automatically stops the auger if the bit becomes jammed, and should the brake lever make contact with the use, the machine stops immediately. It also features a vertical pleated air filter for improved air supply quality and extended service life. Its semi-automatic choke lever enables a simplified starting procedure that reduces the chance of flooding, and the lightweight construction allows for more controlled drilling from an upright position. The handle frame is separate from the engine for easier operation, and an advanced vibration damping system and oversized hip pad increase operator comfort, even during extended periods of use. The STIHL BT 131 auger guarantees an impressive performance with enhanced safety and comfort for safer, faster, easier use.
Husqvarna and Rudamans show their strength at Agfo 2017

Certainly one of the biggest and most impressive stalls at this year’s Agfo Expo, held at the Castorbridge Lifestyle Centre in White River from 14 to 16 September, was the joint Husqvarna and Rudamans stall, which had on display everything from industry staples like the 61 chainsaw, which has been a market winner for years, to brand new equipment for the forestry and agricultural industries, and even vehicles.

According to Roger Jackson from Husqvarna, the Agfo Expo has provided them as a supplier, as well as their local dealers, Rudamans Nelspruit, with the perfect opportunity to bring their products to the client.

“Rudamans Nelspruit is probably one of the best dealers in the country from both a sales and a backup point of view,” says Jackson about their local dealer. “They really leave no stone unturned to take the business to the client.

“They are without a doubt one of the leading suppliers to the forestry sector in the area, providing clients with the full range of forestry equipment and solutions.”

The new Husqvarna Silent Power range of battery operated forestry equipment was a crowd puller. The range is aimed at doing smaller jobs like brush cutting and pruning.

Saw Specialists at AGFO 2017

Saw Specialists is a family business established in 1966 by Ivan Welsh. Today the company includes Robert and Peter Welsh, who continue the tradition of ensuring that Saw Specialists is well known for the quality of the materials it uses and the products it manufactures. Its services include band saw wheel grinding, checking and strain testing, machine alignment and repairs to TCT saws, wide band saws and tooling. The head office is in Durban and there are branches in Nelspruit and Pietermaritzburg.
When Nelson Mandela University (NMU) first-year forestry student, Alice Mheluka, was nominated to represent young industry workers at the 27th IUF World Congress as a delegate of the Tanzania Plantation and Agricultural Workers Union (TPAWU), an IUF (International Union of Food, Agricultural, and Allied Workers’ Associations) affiliate, she jumped at the opportunity.

Alice, who holds a degree in Environmental Sciences & Management worked for New Forests in Tanzania as the only female forester prior to enrolling for the Diploma: Forestry at NMU George Campus this year. She serves on the executive committee of the Tanzania Plantation & Agriculture Workers Union and, based on her proven track record, was nominated by the trade union to be their representative at this year’s IUF conference held in Geneva, Switzerland.

Alice found the conference to be enlightening and progressive in terms of addressing challenges experienced by workers in the various industries represented from countries across the globe. “The challenges in the forestry industry are similar in all countries, and require a global approach to find solutions. The rapid introduction of technology/digitisation and the prevailing gender imbalance in Tanzanian plantations are of particular concern,” she says.

“I was especially proud to be a young ‘Madiba’ because of how people from around the world idolise Nelson Mandela and a number of presenters quoted him at the conference”.

Alice, who is still an employee of New Forests, passed her first semester with straight distinctions. Another feather in her hat is that she is the only African appointed on the global ad-hoc committee for young workers – a forum that meets twice a year to write reports that are presented to the global trade union fraternities.
A relative newcomer to the forestry industry, Pellenc, partnered with their local suppliers, Rudamans Nelspruit, at the AGFO 2017 Expo to show off their impressive range of battery operated handheld machines for the forestry and agricultural industries.

Pellenc was created to serve grape growers for the wine industry in France, providing them with a wide range of machines and solutions for the past 20 years, but has now created a new range of battery operated machines that will undoubtedly come in quite handy in both the agricultural and forestry sectors.

The range, which features a powerful chainsaw, shearsers, hedge trimmers, pruning shears, pole pruners, tree shakers, and even a weed eater – all battery powered – is specifically designed to reduce the carbon footprint in the field by eliminating the use of petrol for handheld machines in the forest, and thus also eliminating emissions from fuel-driven motors.

According to Pellenc product specialist, Matthieu Hommel, the range comes with a wide range of batteries, depending on use. “We have large batteries that is worn like a backpack, ergonomically designed for comfort, that will allow a forest worker pruning trees or clearing branches a full day of work on a single charge, or smaller batteries for smaller jobs.

“The batteries are fully interchangeable, so there is even the option of buying more than one battery, one for smaller jobs, and one that will last the full day.”

Hommel says that their products are of the finest quality and is built with the professional market in mind. “These products were designed for the professional market and they are strong and sturdy, and can stand up to any job that you throw at them.

“The savings that one can achieve by eliminating the need for petrol is quite staggering,” says Hommel, adding that over the two year guarantee period, the petrol savings alone can amount to easily 4 000 litres on their 700 watt-hour battery, and approximately 7 000 litres on their 1 500 watt-hour battery.

“Pellenc has only been active in South Africa for three years, but has served the wine industry in the Cape for most of that time. It is only recently that we have decided to expand into the wider agricultural sector as well as into forestry.”

According to Rudamans salesman Craig Blanshard, the Pellenc range of machines is set to take the market by storm. “The machines enable operators to prune up to six times faster than if they were pruning by hand,” says Blanshard.

“This, coupled with the fact that they are one of the first product ranges of this type on the market that can work a full day on a single charge, will make them very attractive to the agricultural and forestry sectors.

“The ergonomic design of the battery backpack, as well as the reduced carbon footprint from not having to use petrol to power the machines will just add to the attractiveness of the machines to the agricultural and forestry sectors.”
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The second DANA Forestry Investment Conference was held in September at the Skukuza Conference Centre, attracting an impressive lineup of speakers from across the globe and covering a number of very interesting topics aimed at promoting investment in the African forestry industry.

Speakers, including investment consultants unpacked the current state of the forestry industry in Africa and abroad, pointing out possible investment platforms and highlighting the fact that there is a lot of growth potential in the forestry investment sector, particularly in pioneer markets and emerging markets in Africa.

One of the points that was repeatedly stressed is the fact that there is currently not enough investment into new forestry projects in South Africa to meet future demand, and that this is likely to result in South Africa having to start importing timber, which will likely lead to severe repercussions for the timber value adding industry in the country, as source countries would obviously prefer to keep the timber value adding in-house and rather export finished products.

Another hot topic was the issue of silviculture, which was brought up in nearly every presentation as a major challenge to the industry, especially from an investment point of view, where the focus is firmly on investing in hectares of plantations, with issues like silviculture often being overlooked.

Speakers included representatives from companies all over Africa, detailing the current state of the forestry industry in their respective countries and discussing the opportunities that exist for investment.

Countries represented included South Africa in the form of York Timbers, Swaziland, Zambia, Mozambique, Uganda, Tanzania, Kenya, Gabon and Malawi.

Research presentations included a talk on the need for good applied research in forestry plantation developments, presented by Andrew Morris from the ICFR, as well as a very interesting talk by Prof Steve Verryn from Merensky on the advances in breeding Eucalypt sawlog species.

The two day conference was followed by a two day road trip, where delegates visited a number of prominent nurseries, plantations, a sawmill, and value adding plants. The road trip also included a visit to the second AGFO show, which was held in White River.
Improving forest asset values by optimising cash flow returns and productivity

Charl de Villiers from Pöyry Management Consulting made a riveting presentation during the recent DANA Forestry Investment Conference, on the topic of improving forest asset values by optimising cash flow returns and productivity.

The changing landscape of forestry
According to De Villiers the landscape of forestry is changing globally and in Africa, and there is currently about 100-billion US dollars of investments in forestry assets globally.

“Traditionally investors have been attracted to timber land as an asset class due to its strong historical returns, low correlation with stocks and bonds, tax incentives and protection from inflation.”

De Villiers says buyers and sellers in this space are now much more informed, with significant competition when scalable opportunities arise in desirable markets, however these are becoming scarce.

Investors are now looking to frontier markets for new opportunities as higher prices for assets in developed and developing regions are pushing down returns expectations, but at the same time they are focusing on improving cash returns from existing opportunities.

What makes a forestry investment attractive?
The demand for quality forestry assets from institutional investors remain high with criteria for investment favouring assets with early cash flow return potential.

Key drivers for forest asset investment include:
• Active, stable wood markets with sufficient depth
• Low country risk including secure land title
• Positive current or near-term cash yield
• Reputational risk can be managed
• Investment scale (including potential to expand portfolio)
• Positive supply chain logistics - inbound and outbound
• Potential to increase forest productivity
• Potential to improve value recovery
• Local management capability and strong service industry
• Favourable exit strategy

The fact is that with the formalisation of the global forestry industry and its classification as an international asset class, it becomes a high-priced asset with decreasing financial yield.

In addition to exploring emerging, or frontier markets for investment opportunities, investors have been forced to place the focus squarely on increasing efficiency and performance to better the value of the asset.

But is the focus on efficiency and performance not something that the forestry industry has been pushing for a long time?

“Yes, it is,” says De Villiers, “but we are so drowned in data that it is getting more difficult to see the wood for the trees. There is always room for improvement.”

Performance improvement using forest data analytics
According to De Villiers, making use of forest data analytics is one way in which to ensure better efficiency and therefore higher productivity.
"The fact is that we often rely on things that we can measure and understand within the forest to try and improve productivity, but data analytics is more difficult to quantify as it needs a special skillset. Therefore, the significant impact it can have on the production process is often overlooked."

There are many systems available that can be used to improve performance, and with the rapid advancement of technology, it is becoming increasingly important to have the correct tools to interpret the data into actionable knowledge. Data flows are complex and should be managed and systematically mapped.

“One tool that we have found useful is called the Execution Gap (ExGap),” says De Villiers.

“This is the difference between the best possible and achievable performance and the present performance levels with existing strategy and assets.

Outlook for global forestry investments

"While market fundamentals remain solid for future forestry investments, the challenge may increasingly be more in placing capital than securing capital," says De Villiers.

The global demand for tissue paper and packaging is forecast to grow strongly at 2.8% and 2% per year respectively, especially in Asia, while the global softwood market is expected to grow 3% in the Middle East and Africa and 2% in the rest of the world.

According to De Villiers, Africa remains one of the few places where investors are looking for higher returns. Elsewhere the wood fibre and pellets market for use in generating bioenergy could increase significantly in Japan and Korea, where it is expected to increase from 3-million to 15-million tonnes per annum.

He also sees a resurgence in using forests as carbon sinks with improved opportunities to monetise this, while biochemicals and liquid biofuels could still be a big game changer globally.

"Investors are looking at cash flow return as an increasingly significant factor in return determination as they search for improved productivity in operations and growth."
New approach needed for investment in emerging markets

It is estimated that approximately 330 000Ha of new forestry plantations need to be established per annum in Africa to satisfy future demand. Unfortunately, the amount of actual new plantations does not come close to that figure.

According to Roger Naylor, senior consultant at Indufor, one of the world’s leading forest consulting service providers, only around 60 000Ha of new forest plantations are currently being established per year.

“This is all being established by the private forestry industry and not by state owned entities,” says Naylor.

Africa meets all the criteria for investment into the forestry sector. As an emerging market, the continent boasts with a birth rate and high population level, a developing middle class and a high urbanization rate.

In many instances, investors can benefit from the obvious first mover advantage of investing in an emerging market, where low upfront costs, like the low land prices in comparison to mature markets. There are a number of advantages in investing in emerging, or even pioneer markets and it has proven popular the world over – especially for institutionalized investors like pension funds. While forestry investments typically make up only a small percentage of the total investments of these funds, it has been beneficial to them, yielding high returns and a nifty way of diversifying portfolios and spreading the risk.

According to Naylor, forestry investments in emerging markets have been gradually growing, but it remains...
small in comparison to investments in mature markets that typically provide lower risk, but at the cost of much lower return than emerging markets typically offer.

The pitfalls of investing in emerging markets are many. Any investment into an undeveloped market comes at high risk and thus the nature and extent of such risks need to be fully understood before jumping into the deep end. Some of the difficulties include the fact that in an emerging market, one has to look toward the long term cash flow, as these investments are normally quite long term, with high initial costs of establishing the assets.

**Congratulations Willem and ABC!**

**Entrepreneur of the Year® 2017 winner**

**Willem van der Merwe**

Africa Biomass Company

Following a gruelling judging process and assessment of 15 successful finalists, South Africa’s premier annual entrepreneurial competition, Entrepreneur of the Year competition sponsored by Sanlam and BUSINESS/PARTNERS, announced this year’s winners at an awards ceremony held on 6 September.

The event saw Willem van der Merwe, owner of Africa Biomass Company, receiving the coveted title of this year’s Entrepreneur of the Year. Speaking at the event, spokesperson for the competition, Christo Botes, says that while selecting one entrepreneur to be the overall winner was no easy task – especially given the exceptionally high standard of this year’s finalists – van der Merwe was a notch above the rest in terms of the raw entrepreneurial nature of his business.

"Through the establishment of Africa Biomass Company (ABC) – which specialises in land clearing, wood chipping, and wood recycling – Willem has not only created a successful business by clearing landowners unwanted trees, he has also shaped a new industry in South Africa by introducing the novel concept of wood recycling," he says.
Advances in breeding Eucalypt sawlog species

Achieving 22.6% total plantation value recovery through seed improvement and continuous testing with various hybrid and clonal eucalyptus species is no small feat. Yet this is what was achieved by Prof Steve Verryn and his team at the Merensky Group through years of research and testing.

Prof Verryn was speaking at the recent DANA Forestry Investment conference where he highlighted some of the advances that Merensky has made in the breeding of eucalyptus sawlog species.

Verryn started off his presentation echoing what speaker after speaker had emphasised – the importance of good silviculture practices.

“There is no point in pushing for investment in more and more hectares if your silviculture and genetics are not up to standard,” says Verryn. “Silviculture and genetics are very important aspects for us at Merensky,” says Verryn, adding that he does not think there is any large company today that deals in sustainable forestry and does not have a tree breeding programme.

Background

Merensky grows both pine and eucalyptus species, but they are most notably known for their work with eucalyptus, owning and operating what is generally accepted as the largest eucalyptus plantations in South Africa – 10 000 Ha situated in the Northern parts of South Africa near Tzaneen. They are fully certified by the FSA accredited by SATAS.

“We’ve been growing eucalyptus since approximately 1939, and we take great pride in our quality and ethics.”

The company is now moving into their fifth generation of improved eucalyptus grandis, where they focus on building their genetic resources as well as on embryonic testing, using their own seed as well as clonal stock.

“Before grandis became the main eucalyptus species in South Africa, the main species was E. saligna, which was initially imported into the country. Saligna often outperformed grandis in many aspects like growth rate, but grandis gradually took over as the favoured species due to some biological attributes that are sought after, for instance, it flowers quicker than saligna and one is able to clone it.”

According to Verryn, Merensky still grows saligna, which has a rose-coloured wood and has an approximately 10% higher density than does grandis. “Unfortunately it is, like grandis, prone to splitting,” says Verryn.

Merensky also has Eucalyptus urophylla seed currently in development. Testing on urophylla unsurprisingly revealed quite a lot of wood-end splitting, but they have achieved very good results in reducing this.

Merensky is currently developing their second generation sawlog E. urophylla as well as clones, which has the team very excited.

“This falls squarely within our strategy of having enough genetic diversity to overcome things like the leptocybe invasa wasp and other pests and diseased.

Hybrids

Merensky is also heavily involved in breeding hybrid species that show great promise. “Eucalyptus hybrids have become more and more prominent in South Africa,” says Verryn. “We have realised the importance of having diversity in our genetic resources. One of the reasons for this is to achieve some tolerance against diseases and pests like the recent leptocybe invasa wasp infestation, which hit the forestry industry hard.”

Urophylla and grandis hybrid

This hybrid, according to Verryn, shows great promise. “We are very excited about this hybrid from a sawlog perspective,” he says, adding that testing has shown improvements on all the best standards out there at the moment.

“Urophylla originally comes from monsoonal type environments and it can cope with extreme weather conditions, so we are very interested in this hybrid – especially with the backdrop of climate change which we are experiencing.”

Saligna and europhylla hybrid

This hybrid also shows a lot of potential with considerable growth. Verryn says that there are some potential issues with this hybrid, like stem breakage, but this has to be further tested as the problems have only been reported in some of the trees, all from one site.

Grandis and cameldulensis hybrid

Eucalyptus cameldulensis showed a lot of promise initially, but some problems meant that it was not suitable for sawlogs, due to the fact that they would grow very well for the first three years and then plateau off, unfortunately before they were of suitable size for poles.
Hence the hybrid with grandis, which seems to solve this problem. Unfortunately many of the clones were highly susceptible to the feared *Leptocybe invasa* wasp. “Luckily we have one clone that seems to be tolerant to the wasp and we are watching it closely,” says Verryn.

**Value recovery**

According to Verryn, Merensky has adopted an approach of value recovery as the net result of their operation. “This process starts from the seed stage and runs through the entire value chain,” he says.

“The fact is that breeding works and it has accelerated evolution, but the trick is that you have to know what properties you are breeding for, or you can very easily rush off in the wrong direction.

“Thus we looked at our value chain from a saw timber perspective and defined our end goal as value recovery. We look at everything from rooting ability in the nursery, to growth rate and survival rate, all the way through the sawmill to the finished product.

“We do extensive wood properties studies and we look at the whole picture, not just certain aspects.”

As an example, Verryn pointed to a case study in New Zealand, where they had a species that showed so much potential in terms of growth rate, that it outgrew nearly everything else.

“As a result these trees were planted all across New Zealand and Australia. Unfortunately there was no time to do proper wood properties studies and by the time that they realized that the wood was basically like balsawood, there were already investors involved and a lot of sunken costs into something that just didn’t have any value.

“That is why we are so careful when breeding for the traits that we desire. We look at everything from stem form, to growth rate, splitting, shrinkage, brittle heart – a condition where the heart of the log becomes brittle to the extent that it is almost powdery, density, and resistance to pests and diseases.

“Stem form, for instance is much more important than one would think. Firstly it is much easier to work with a nice straight log, and secondly, when it comes to volumes and value recovery, it makes a huge difference.

“There is no doubt that our improved grandis, for example, is much straighter than unimproved grandis.

“Through our efforts, we have managed to achieve a 12% improvement in value recovery from the trees, and a 10.5% improvement in value recovery from the sawmill in the form of the finished product,” says Verryn.

**Leptocybe invasa**

According to Verryn the recent *Leptocybe invasa* infestation had severely affected eucalyptus plantations. “We were fortunate though to come across some trees that were not at all affected by the wasp, so now we have a variety that seems to be tolerant.

**Splitting**

Everyone within the industry is well aware of the fact that eucalyptus is particularly prone to wood-end splitting. At Merensky, the ultimate goal is to have a grandis that shows excellent growth rate and is a really good sawlog timber that translates into optimal value recovery.

Unfortunately wood-end splitting has always been an issue when it comes to working with any eucalyptus species.

But, according to Verryn, Merensky has achieved some very good results in combating wood-end splitting, having managed to reduce typical splitting from an average of 25mm on a sawn plank, to under 5mm.
The future of the wooden pole market in Africa

The last 20 years have been good to the transmission and telephone pole supply industry, but sadly, with South Africa now close to being 95% electrified, the good times seem over. Or is it?

According to founder and managing director of African Certification and Testing, Pierre Tullis, there is still a very good market out there for transmission poles.

Tullis spoke about the current state, as well as the future prospects for the wooden pole market in Africa during the recent DANA Forestry investment conference, where he highlighted not only the prospects for the wooden pole market in Africa, but also challenges faced by the industry today.

According to Tullis, energy demand is growing at 6% per year and will exceed GDP growth until 2040, with several African countries laying out big investment plans for power generation with a special focus on rural electrification – which is ideal for the industry as rural electrification required large amounts of poles.

At the same time, the renewable energy sector in Africa is attracting significant investments, while large gas discoveries off the East African and Mozambique coasts will also contribute to economic growth and electrification.

The role of utility companies

According to Tullis, utility companies design and build their lines to last at least 40 years, thus they need to develop specifications specific to their environment to ensure that poles meet minimum quality standards, thereby ensuring the longevity of the poles.

“The utility companies must also ensure that they inform the forestry industry of their requirements as well as their required pole sizes,” he says. This will also be to the benefit of foresters who need an assured market for their trees. They will know exactly what to plant and can plan their silviculture processes to ensure the best outcome, knowing that there is a market for their products.

It is also vital that utility companies vet and approve all their suppliers, which will further help to ensure that quality standards are kept up and specifications are adhered to. Utility companies should also insist on regular testing.
of the poles that they purchase to ensure that the poles adhere to the specifications as set out by the utility company. "Another problem that we have found is that contractors often handle the poles incorrectly, which then results in damage to the poles. The treatment plants get the blame, while the fault actually lies at the door of the contractors. You cannot throw a pole from the back of a truck and then blame the treaters if it cracks."

Tullis is adamant that utility companies need to run pole maintenance programmes and remediation programmes. "It is vital in order to help ensure that the poles do last the required 40 years. In Tanzania for instance, you get 100% pole failure after 10 years. But in the US, with the correct maintenance and remedial processes in place, you get pole life of up to 90 years."

Role of the wooden pole industry
Electrification in Africa supports economic growth, improved health and education, and reduced deforestation – all key development objectives.

Utility poles has the highest wood paying capacity of all end markets for wood in Africa and the demand for wooden poles is likely to continue to grow rapidly, with the demand in East Africa having doubled in the last five years and new electrification initiatives being planned all over Africa.

The main issue currently is that, due to serious concerns over the quality of wooden poles supplied, the wooden pole market is now being threatened by the fact that concrete poles have started to compete in this space. According to Tullis, it is not really an issue of concrete poles taking over, but rather an issue of quality. "The fact is that we will continue losing market share to the concrete pole industry if we do not ensure that our quality and standards are up to par. "The wooden pole industry is willingly giving away its market share to the concrete pole industry because their standards are poor and the quality of the product is not upheld."

Current challenges for the wooden pole industry
"The future of the wooden pole industry rests solely with the quality of poles that we produce," says Tullis. "It is a responsibility that rests with every player, from the forester to the treater."

"It is essential for the producer to be able to source enough good quality raw material in order to produce good quality, long lasting poles.

"Quality concerns are undermining the competitiveness of the modern wooden pole industry and in areas where poles have shortened life spans due to defects and persistent shortages, utility companies are bound to look at alternatives such as concrete poles that are perceived to be of superior quality."

Tullis says that under high demand pole producers are also finding it difficult to source enough quality raw material to fill orders.

"Your capacity as a pole manufacturer generally has less to do with how big your treatment plant is than it has to do with how much quality material you can source."
Swaziland and opportunities for forestry investment

There is potential for approximately 100 000 hectares of forestry development in Swaziland today, according to Ferdie Brauckman from TWK Agri, the 100% shareholder in the Shiselweni Forestry Company, which has substantial forestry and value adding assets in the country.

Brauckman was speaking at the recent Dana Forestry Investment Conference held in Skukuza, Mpumalanga.

TWK Agri is a South African company that, in addition to their holding in Shiselweni, own and operate their own nurseries and plantations and lumber milling operations in South Africa. It is also heavily involved in wood chip exports into the Eastern markets from the port of Richards Bay.

Brauckman's presentation centred around Swaziland and the potential that the country holds for investors in the forestry industry. "Swaziland is a fantastic country to invest your money in," he says. "There is no corruption and the country is geared toward attracting investment and creating jobs. There are investment protection laws and tax incentives that make it really attractive."

"The law also allows for repatriation of your profits and dividends and the Swaziland Investment Promotions Authority helps with the necessary administrative work right through to the actual on the ground work."

The country

Swaziland has a population of about 1.3-million people and is ruled by a monarchy. In 1967 a Westminster-style government was adopted and politically it has been peaceful and stable ever since. The Swazi people uphold and fiercely guard their traditions and culture. According to the last survey conducted in 2005, the literacy rate is 89% and the main languages are English and Siswati.
The country has four climatic regions named the Highveld, Middleveld, Lowveld, and the Lubombo Plateau. The climate is especially suitable for forestry, with an average rainfall of between 1 000 and 2 000 mm in the summer, and average summer temperatures of 20 degrees Celsius, and average winter temperature of 12 degrees Celsius.

There is a well-developed road and rail infrastructure connecting the country with both South Africa and its northeastern neighbor, Mozambique. There are plans for expansion of the rail network in the east of the country, for which the government is currently in the process of raising funds. Bulk exports are made possible through rail connections with the ports of Richards Bay in South Africa, and Maputo in Mozambique.

Per capita GDP is 31% of the global average. The country imports 70% of its commodities from South Africa. Exports include beef, citrus, canned fruit, refrigerators, textiles, sugar, and soft drink concentrates, mainly from the Coca Cola Company.

Forestry

Brauckman says there is currently about 27 000 hectares of plantation forests the north, 55 000 hectares in the central districts, and 23 000 hectares in the south of the country. In addition, there is about 20 000 hectares under plantation in the hands of the informal sector. He says this sector is expanding with many small growers entering the market.

The main species grown in Swaziland today are Acacia Mearnsii, a wide variety of Eucalyptus, and Pinus Patula.

The major forestry operators in the country are Shiselweni Forestry Company, Montigny Investments which is currently the largest operator, Swaziland Plantations, and Peak Timbers. There is also many private growers active in the country, most of them supplying to the larger sawmilling companies.

Existing processing plants include sawmills plants for hard and soft woods, mining timber mills supplying South African mines with support props, pole treatment plants, and chipboard plants.

Opportunities

“With the demise of Sappi’s Usuthu plant, there is a lot of fibre available in the country,” says Brauckman. “So there are big opportunities for bio-energy operations.”

He adds that Swaziland is one of the only countries in Africa that has the potential to generate 100% of its energy requirements through renewables, of which biomass will undoubtedly be a big part, as will hydro power and solar and wind energy.

Responding to a question from the audience about recent softwood biomass shipments from Swaziland to Portugal, Brauckman says he believes that biomass exports from Swaziland to Northern Europe and surrounds should be sustainable going forward, but that he does not believe investments in biofuel would be as sustainable. “The price of biofuel just isn’t there,” he says, adding that once the country’s plans for energy generation start coming into effect, the bulk of biomass produced will most likely be utilised for energy generation.

Brauckman says that, for someone with the guts to do it, there is an opportunity to invest in pulpwood plants.
Bob Flynn, director international timber of Resource Information Systems Inc (RISI) presented a talk on Africa and the global wood chip trade during the recent DANA forestry investment conference.

It is a well-known fact that the largest market for exports of wood chips is in Asia, but conference goers were surprised to find out just how big the Asian market for wood chips is. According to Flynn, Asia currently takes approximately 95% of the global woodchip export market, amounting, in 2015, to 12 750 000 bone-dry metric tonnes (BDMT) of hardwood chip, and for the first seven months of 2017, to 13 686 000 BDMT.

This means that this year, hardwood chip imports into Asia will set a record high for the eighth year in a row. In fact, in 2016, the Asian wood chip import volume was equal to the total combined industrial round wood harvests in South Africa, Swaziland, Mozambique, Zambia, Uganda, Malawi, Ghana, Tanzania, Rwanda, Gabon, Burundi, Angola, Kenya, Congo, Zimbabwe, Botswana, Ethiopia, Cameroon, Cote d’Ivoire, Madagascar, Benin, Togo, Liberia, Niger and Equatorial Guinea.

South Africa holds a relatively small share of this industry, with market share having steadily declined from 24% in 2005 to approximately 8% currently.

If one looks at the total South African wood product exports, wood chips account for 46% - a drop from approximately 55% average over the past 20 years - of the market, followed by wood panels at 12%, builder’s joinery and logs at 10% respectively, sawn wood at 9% and charcoal at 4%.

**Why do we care about woodchip exports? Most valuable South African wood products export**

![South African Wood Products Exports, Share by Value, First Half 2017](image)
According to Flynn, having access to the export market as an alternative to the domestic market represents an important opportunity for countries like South Africa and Chile, where two very large companies produce all the wood pulp, to ensure that growers receive a fair market value for their products.

Is there potential in the Asian wood chip market?
Vietnam is currently the leading exporter of hardwood chips to the Asian market, with a 33% share of the market, closely followed by Australia at 26%, and Chile and Thailand at 12% and 9% respectively.

RISI foresees a significant supply deficit developing in the coming years, with Vietnam expected to reduce its wood chip exports by as much as half, and Australia, where no significant growth in plantations has taken place since 2008, also expected to reduce its wood chip exports. Similar trends can be expected in Chile and Thailand.

Flynn predicts the resulting supply shortfall to reach approximately 1-million BDMT per year by 2021, and that this deficit will widen significantly over the following five years.

"Emerging markets in East Africa will not be enough to cover the loss from Australia alone," says Flynn, who concludes that he foresees that the result will either be large scale closures of pulp mills within Asia, or that they will find new suppliers of which we do not yet know.

There may therefore be opportunities for African investors in this space.
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Peet Groenewald of Mitrek Sawmill in White River, Mpumalanga, attributes the increase in his sawmill’s turnover and yield to the installation of a new twin-rail processing machine.

A Wood-Mizer LX450 twin-rail sawmill was recently installed at the mill, which mainly cuts pallet components for pallet manufacturers. “Our monthly turnover has increased by 25%, and the volumes cut per month by 30%,” explains Groenewald.

Groenewald started his sawmilling career in 1997 with a Wood-Mizer LT20 to get the business off the ground. Later he added two Wood-Mizer LT40s and Wood-Mizer resaws and edgers to expand the mill. In 2017 he decided to replace one of the LT40s with the recently launched Wood-Mizer LX450, and says the impact of the machine exceeded his expectations.

Mitrek mainly processes eucaplytus hardwood with an average weight of 640kg per cubic metre. The logs that Mitrek processes daily typically range in size from 150 to 800mm in diameter, and is notoriously difficult to cut because it has a lot of warp and internal tension.

Groenewald decided to opt for the LX450 because of the relationship that he has built up with Wood-Mizer over many years. “I know the company, the service and the products and I based my expectations and business projections on my previous experience with Wood-Mizer equipment.”

The machine has changed Mitrek’s operations. “In fact, the LX450 has exceeded my wildest expectations. It’s the best thing I’ve done,” he says. “The extra capacity that the LX450 has given me has forced me to completely change the long-term plan that I had for the mill.”

“The strategy for 2017 was to streamline the mill with increased mechanisation. With the LX450’s arrival, I’ve had to refocus to simply deal with the output from the mill. It has also allowed me to diversify into more profitable cutting activities,” explains Groenewald.

Wood-Mizer says it is currently the first and only sawmill manufacturer with either a monorail or twin-rail design to choose from, and its flexibility accommodates various sawing applications and preferences.
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Two decades of developing the art

The 20th anniversary of the South African Lumber Dryers Educational Association (Saldea) annual conference was recently celebrated in style by 40 delegates from the timber growing areas in the country.

Maurits Perold, chairman of Saldea, oversaw the proceedings and facilitated the questions and discussions that were sparked by the presentations. The two day event was held at the Ingeli Forest Resort conveniently close to Hans Merensky Group’s modernised Weza Sawmill in KZN that provided the venue for the organisation’s annual sawmill visit.

Skills development

Roy Southey of Sawmilling South Africa presented an update on the development of the Kiln Operator qualification. The curriculum has been approved by the relevant authorities and once it is published the process of developing the learning materials and assessment tools will commence and should be completed in 2018.

Recovery

Mandy Allpass of Crickmay Supply Chain Evolution set the scene for the conference by discussing the market trends over the past 20 years in the sawn timber industry in South Africa. “In 1998 there were approximately 65 structural mills producing 1.3-million cubic metres per annum, and in 2017 there are about 35 mills producing 1.6-million cubic metres per annum,” she said.

“Very importantly, over the past 20 years volume recovery has tended to improve, despite changes to the sawlog mix over time. Mills have become more efficient, most likely because of improved technologies, such as log scanners, band saws, etcetera, and have managed to better theoretical recoveries.”

Over the past 20 years there was an increase in sawn timber for the structural market, and a general decrease in the remanufacturing, packaging, and exports markets.

“Despite the growth of the structural market there has been a steady decline in demand from the local building sector from its peak in 2015. In addition, export volumes from structural mills have reduced over time and currently we export less than two percent of our total production.”

The drop in demand from the local building market is resulting in an increase in sawmill stocks, similar to the start of the 2008/2009 recession with mills sitting

Twin rail

LX450 launched

Wood-Mizer’s new LX450 sawmill can cut log widths up to 86cm, diameters up to 91.5cm and lengths of up 6.1m, and additional beds can extend the cutting length even further.

The LX450 features many of the same benefits of the Wood-Mizer LT sawmill series, however a key innovation of the new machine is the rigid XFrame saw head that travels on parallel, hardened steel bars to accommodate a larger width and depth of cut, and gives the operator better visibility during the cutting process.

“Wood-Mizer has long been the only sawmill manufacturer of the monorail cantilever design, holding several patents on this technology and trusted by 70,000 sawmillers throughout the world,” says Robert Baginski, chief operating officer of Wood-Mizer Industries in Europe.

“Every sawmiller has unique needs and preferences which led to the addition of the LX sawmill series. You can now own an LT series monorail or LX series twin-rail sawmill and receive the best support in the industry enjoyed by Wood-Mizer sawmill owners throughout the past 35 years.”

Standard features for the LX450 sawmill, are similar to the popular LT40, and includes power feed, power up/down, hydraulic log handling with a bi-directional chain log turner, and a walk-along operator control console with SimpleSet Networks.

A drag-back board return system makes it easy to offload cut boards in a fast, accurate and less labour intensive way.

LX450 Sawmill Specifications:

- Power Options - 18.5kW electric motors
- 91.5cm diameter x 6.1m length with extra bed extensions for longer logs
- 86cm width of cut and 41cm depth of cut

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Drying specialists
This year the conference presenters were a mix of young and older drying specialists. People like Perold, Christiaan de Klerk and Edward Ehlers of TF Design, and Henco Viljoen of Timber Soft, are adding their names to those of the “old guard”, like Dr Peter Stöhr, Wilhelm Meyer, Henri du Plessis, Abe Stears of SAFAS, and Roy Southey. These industry stalwarts are always eager to share their knowledge, and they continue to emphasise the need for kiln dryers to know the basics, to be thorough and not to take short cuts. Du Plessis has been involved in the industry for 49 years, Meyer for almost the same period, while Dr Stöhr is celebrating his 50th year, and all are adamant that they are “still learning”!

Sawmilling
Two decades of developing the art of how to dry wood
Monitoring and controlling kilns
Dr Stöhr of the Timber Drying Institute, Henco Viljoen of Timber Soft, Wilhelm Meyer of ZA Dry Q and Jacob Viljoen of Dryzone Technologies all discussed the importance of using appropriate and tried and tested methods and technologies to monitor, record and control kiln drying.

Stöhr explained exactly how wet and dry bulbs work, the role of humidity and air flow in a kiln and how to interpret the information gathered.

Henco Viljoen addressed the pros and cons of relative humidity probes versus dry and wet bulbs. He described tests he performed to compare the two and concluded that there are advantages and disadvantages with both systems, however the main disadvantages of relative humidity probes are the prohibitive cost of the probes and the fact that they are not suitable for corrosive species like eucalyptus. In addition, if condensate forms on the probe the accuracy is reduced to zero.

Jacob Viljoen discussed drying approaches in the southern hemisphere, drawing on examples his experiences in Australia, New Zealand, Chile, and Brazil.

"Drying managers who use the Dryzone in-kiln moisture measurement system with sensor plates to measure the average moisture content per stack, find that it increases kiln throughput and reduces over drying, saves electrical and heat energy, enables automatic end-point drying, reduces the costs of degrade due to over drying, and eliminates the need to re-dry kiln charges," said Jacob.

Stöhr also discussed the challenges facing the industry and informed the audience about what he considered to be the ideal drying conditions at sawmills.

These factors include a greater focus on understanding the characteristics and properties of timber, the utilisation of wood residues, an application of available technologies and, most importantly, the development of drying personnel.

Meyer explained the advantages of drying according to the principles of the ZA DryQ Mark quality system, which addresses the entire drying process, from pre-drying to post-drying. The system was developed through the former SA Lumber Millers Association (Salma) and Meyer presented a case study of the system that he successfully implemented early in the noughties.

Quality drying
No matter the type of raw materials supplied to sawmills, Du Plessis said "Drying lies at the heart of producing quality sawmilling products, as it renders the product saleable. It creates more value to the sawn timber than any other part of the process of producing sawn timber."

He said the ideal for any sawmill is to have the best kilns that deliver low cost and quality lumber. But the cost of new kilns, whether imported or locally manufactured, can be prohibitive.

He remarked that highly trained kiln operators are scarce: "The lack of willingness by sawmill owners to acknowledge the importance of kiln drying normally ends up with the kiln operation being neglected and left to operators who do not understand the ramifications of poor drying. Apart from the costs to the mills, the cost in the market place is real."

Boiler blowdown
On another technical note, Rishaan Nkundisun of Spirax Sarco explained the concepts of total dissolved solids (TDS) and the role it plays in boiler blowdown. Boilers require periodic blowdown to maintain effective operation, provide for good equipment life, and reduce maintenance time and expense. In this sense, "blowdown" refers to the removal of boiler water to maintain an acceptable level of total dissolved solids (TDS).

When a boiler generates steam, impurities in the feed water will concentrate in the boiler water. As the dissolved solids become increasingly concentrated, the steam bubbles tend to become more stable, failing to burst as they reach the water surface of the boiler. There comes a point (depending on boiler pressure, size, and steam load) where a substantial part of the steam space in the boiler becomes filled with bubbles, and foam is carried over into the steam main.

Whilst foaming can be caused by high levels of suspended solids, high alkalinity or contamination by oils and fats, the most common cause of carryover (provided these other factors are properly controlled) is a high TDS level. Nkundisun said careful control of boiler water TDS level together with attention to these other factors should ensure that the risks of foaming and carryover are minimised.
Quality drying tips from the experts

“It is an art to mess up at drying timber”

Technological developments drive all aspects of timber processing, however there is no escaping the need to know, understand and apply basic principles, particularly when it comes to managing the drying process.

The pointers below are a synopsis of just some of the sage advice offered by the industry drying experts at the Saldea anniversary conference.

- You must know what your kiln can do and dry accordingly.
- You cannot increase volumes dried by simply putting in more wood and raising the temperature.

Quality starts with the kiln stack

- A perfectly flat base (trolley) forms the foundation of a proper stack
- Stickers should be planed all round to ensure they are all the same dimensions, usually 22mm thick
- The average stack consists of 64 stickers, depending on the size of the boards to be dried
- Boards must be precisely sawn to prevent bending and crooked drying
- If loading by forklift, the forklift’s tines should match the stack length to prevent the stack and boards from bending
- Weights should be used
- A uniform stack with no gaps between the boards and stickers in a straight row is ideal
- Do not mix wood species and ages in stacks
- Burnt and case-hardened logs from burnt areas needs special techniques to dry correctly

Kiln Issues

- Correct and proper baffling, adequate sized plenum chambers and vents and their controls
- The volume of air flow and air speed between stack layers should be smooth and match the kiln’s designed performance criteria
- Adequate heating capacity to give fast heating up of the total wood volume in the kiln to allow the shortest period to get the timber cores to dry bulb temperature. Remember the heating up period is lost time
- The kiln needs enough wet and dry bulb measuring positions to ensure even humidity distribution to ensure even drying

Solar Kilns
- Gas back-up
- 10m³ - 100m³ capacity
- Heat treatment units - ISPM 15

FLEXIBLE SOLUTIONS FROM A 8M³ TO 100M³ KILN

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A highlight of the annual lumber driers’ conference is the site visit to a working sawmill or product supplier, and this year Hans Merensky Holdings opened its Weza Sawmill gates to the delegates.

With a total of over 67,000 hectares across South Africa, Merensky’s privately owned plantations supply pine and eucalyptus lumber to southern African and international markets. These plantations are among the largest privately-managed plantations on a saw-log rotation in the country.

Over the years Weza has transformed itself and today it is an example of a successfully modernised sawmill. After a safety briefing, the large group of visitors was split into two, each with a guide, and introduced to the fully automated merchandising yard equipped with the first Holtec tree-length log handling line in South Africa.

The line works with two in-feed cross conveyors and can process a complete range of logs from 2.4m up to 24m in length. One conveyor is used for short logs of up to 3m in length and a second for tree lengths of up to 24m. The singulated logs are ejected by a disc ejector onto a measurement and cutting line with a Holtec length stopper table.

Automatic stacking by the Holtec system marks the end of the wetmill process.

Automatic and visual sorting takes place in the wetmill.
High capacity cross-cutting and sorting line with direct connection to the sawmill at Merensky.

Multi-saw crosscut station for highest demands at Johannesburg Timber & Box.

Your reliable and innovative partner for wood processing.

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info@newsaw.co.za
www.newsaw.co.za
The measurement line detects the diameter of the log on its full length and determines where the cuts should be made. The software for this optimisation works automatically and enables the cutting line to operate with up to nine cuts per minute. After cross cutting, the logs are debarked before being scanned for length and diameter. The logs are then sorted according to diameter classes or kicked directly onto one of three infeed decks to the wetmill.

The group had a quick stop to view the wood chip bins and infeed into the two John Thompson boilers. One boiler receives wood chips from the chipper canter line and the other feeds on the bark and sawdust from the logyard and wetmill. The boilers and boiler controls resulted in some lively discussion before the group entered the automated wetmill.

The wetmill consists of an EWD / Linck chipper-canter saw line and an EWD edging line. Behind the chipper system the workpieces are separated by a Kalfass peel off system and an operator decides whether boards with wane edge should be sent back to the EWD edger or continue to the sorting station. There are three Kalfass sorting stations as well as manual stacking stations. At the automatic stacking stations, the stickers are inserted between each row of carefully laid boards and the stacks for kiln drying are prepared with an output of up to 10 layers per minute. The next step is for the prepared stacks to be transported by fork lift to the kilns for drying.

At this point the visitors saw the target of their visit, the six huge Mahild kilns, and Emmanuel Sithole, the Weza kiln manager who oversees the drying process, had to hurry to keep up with them. The timing was perfect because one of the kilns was partially filled and open for the
visitors to do what they do best – examine and eagerly discuss the minutiae of probes, sensors, wet bulbs, dry bulbs, air flow, baffles, sticker lines, stacking espacement, size of the kilns in relation to the number of stacks and location of the fans, etcetera.

It was only when the fork lifts arrived to complete the recharging process that Emmanuel could remind the enthusiastic drying experts that they needed to move onto their next important station, the control room of the kilns.

Here the focus of the discussion was on the human machine interface (HMI) and the amount and type of information the kiln manager has at his disposal. This also resulted in much discussion and Emmanuel was kept busy explaining the ins and outs of the system.

The focus of the visitors was clearly on their field of expertise – the lumber drying - and they paid a very short visit to the drymill. When the drying process is completed the packages are conveyed to the drymill where a single operator oversees the Kallfass tilt de-stacking unit that separates the boards from the stickers and collects the stickers for reuse.

The finished boards are re-stacked into 1.2m x 1.2m packages ready for further value adding by Weza’s customers.

It was with reluctance that the Saldea group left the sawmill, and it was only the increasingly wet, misty and wintry weather, and the call of the glowing fires and sustenance at Ingeli Lodge, that convinced them to leave.
The overwhelming vote of confidence in his leadership left Maurits Perold with little choice but to accept his re-election as chairman of the South African Lumber Dryers Educational Association (Saldea) for another year during the annual general meeting.

The secretary, Amanda Pretorius was also unanimously re-elected amid applause for her sterling 18 years of voluntary service to the 20-year-old association. She was thanked for her contributions and particularly for all the long hours and work she put into organising this year’s celebratory conference.

The additional elected committee members are: Patrick Mashala (Northern Province), Edwin Botha (Mpumalanga), Duanne Bennett (Eastern Cape), and Henco Viljoen (Western Cape). It was decided that Troy Dodson would again be approached to represent Swaziland and, sadly, the lack of feedback from Zimbabwe, prompted the association to remove the country from the list.
Sawmilling

• The largest possible sample size of in-wood moisture measurement ensures best drying control
• The best state of the art kiln controls ensure quality drying
• Adequate steam traps and correct flow angles of the heating coils is important for quality drying
• Kiln must have adequate total wet steam available to moisturise all timber in the kiln before starting to dry, and again during the equalising and conditioning period to ensure stable and non-stressed timber after drying
• Bent boards use space and prevent full packages. This lowers capacity and causes bad final products
• Only flat, straight and regularised sized timber can be successfully used in automated systems

Results of poor drying
• It is far better and cheaper to dry straight and flat in the first place
• Reworking: Twisted timber (mostly from over drying) must be re-moisturized in a stack with heavy weights on top until flat. It must then be plasticised at above 120°C, and forced flat, then equalised and conditioned again
• Bowed and bent timber can be cut short and finger jointed and reconstituted into long, straight and flat timber - at a cost
• Over-dried as well as under-dried timber cause problems in finger jointer profilers due to splintering
• Breakouts of the wood profiles in the boards and moisture problems cause difficulties in the glue joint when the timber does not fall within the moisture limitations of the glue that is used, causing joint failures later
• Warp
• Internal stress that causes the timber to react badly when resawn
• Cracking and minute surface checking only visible once planed / varnished
• End splits
• Value downgrade
• Fungal attack within the parcels of timber
• Customers stop buying

Kiln profitability vs value of the kiln operator
Peter Stohr said “Drying is the most difficult and intricate operation in a sawmill - and the most profitable.” He offered the following calculation as an example of product value in a small sawmill:

1. 2 kilns with a capacity of 80 cubic metres each x 4 stacks  
   Value: 2 x 80 x R3120 (avg. 38mmx114m longs)  
   = R499 200/2 per kiln charge
2. With 48hrs drying cycle = 15 charges per month  
   = R7 488 000/month goes through the two kilns

The key questions are:
• How many kilns do you have?  
• What is the kiln operator paid?
Since 1950 innovative kiln producer, Brunner-Hildebrand, has acquired an international reputation for developing technologies that are quickly adopted by other kiln manufacturers, such as the continuous kiln concept, high-capacity kilns, all-aluminium construction methods, reversible airflow, computer-based kiln controls, electronic fan speed controls, and more.

White River-based Barry Collier & Company represents the German company, and Frank Latteman, Brunner-Hildebrand’s technical manager for service, assembly and computer control systems, is a regular visitor to these shores.

Each year Latteman attends the South African Lumber Dryers Educational Association (Saldea) conference and AGM, and this year was no exception. Although he did not make a presentation, he was an active participant during the conference and enjoyed the field trip to Merensky’s Weza sawmill.

Brunner-Hildebrand’s continuous kilns are ideal for both soft and hardwood sawmills with standardised lumber dimensions and qualities. The continuous kiln system consists of a series of connected chambers and the material moves along the conveyance system by means of a hydraulic pulling unit so that wet lumber is loaded at one end and dry material emerges at the other side of the kiln.

This continuous process eliminates long loading and unloading times. Instead of a firm using the traditional kiln approach with separate chambers that are loaded and treated one at a time, the design allows a continuous flow of material through up to nine individually computer controlled climate zones, which boosts productivity and saves energy.

An added benefit is that while the material is traveling through the kiln there is no need for additional storage outside the kiln. The logistics and materials handling can be controlled, which saves time, energy and money.

Last year Latteman introduced the company’s Greenkiln technology at the Saldea conference. He explained that it reduces kiln emissions markedly. The idea is that the amount of wasted heat and excess heat generated during the drying process can be reduced or redirected, which saves energy and limits the total impact on the environment. With the Greenkilns design, valuable energy stays in the system because the heat recovery unit is built into kiln and not attached to the outside of the kiln. This reduces the impact of wood dust, resins, and other deposits on the system.

The rapid development of lumber drying technology requires suitable electronic kiln controls that can meet the challenges of modern drying technology. Latteman says Brunner-Hildebrand’s B 9400 COMP processes even the most intricate drying schedules accurately.

The various drying programmes are available on DVD or over the internet. He says that globally the B 9400 COMP is the only control system that uses the drying gradient or depression. This is a primary safety feature when drying valuable lumber. In addition, on-line programme updates, alerts and transmission of data and remote control is possible.
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TF Design’s engineers have used their knowledge of the sawmilling industry and the latest technologies to develop a eucalyptus drying solution for Yaverland Timrite Sawmill, situated in White River, Mpumalanga.

TF Design did not hesitate to accept the challenge when Yaverland Timrite Sawmill approached them to provide a turn-key solution for drying eucalyptus timber. For the past 20 years TF Design has developed and installed numerous kiln systems in southern Africa and this experience, and resulting knowledge base, provided the opportunity for the development of a new eucalyptus turn-key drying solution.

Yaverland Timrite Sawmill has for many years supplied air-dried timber to the mining and local solid wood based industries. A disadvantage of air-drying is that the timber is exposed to uncontrolled drying environments, which often results in drying defects.

Although many smaller sawmills are aware of the financial benefits associated with drying their own timber, they usually do not have existing kilns or other steam or hot water generation infrastructure. In addition, the cost of a drying system presents an entry barrier to the dried timber market. The team at TF Design set out to develop an affordable solution that will help smaller sawmills improve their dried products and value offerings.

Research
The starting point was to use the thermodynamic principles of timber drying to evaluate various kiln designs. The key outcomes were:

- A batch kiln design would provide high quality timber and increased flexibility to smaller sawmills.
- Specialised structural grade aluminium profiles would decrease the amount of material used for the kiln, yet increase the overall structural strength.
- Optimum space utilisation of the kiln structure volume would reduce drying capacity cost per cubic metre.
- The kiln sub-system (heat transfer, fans, vents, and control system) should be correctly sized to ensure optimal efficiency.
- The kilns should be loaded by forklift or manually to reduce infrastructure costs.

Based on this research, and the properties and characteristics of hard wood timber like eucalyptus that need a slow and controlled drying environment, TF Design decided that a hot water system would be the best solution.

The advantages of a hot water system are:

- It is inherently safer to operate and maintain.
- The heating equipment is affordable due to lower working pressures and specifications.
- Lower capital investment compared to steam.
- Low water consumption (closed loop system).
- No statutory inspections required.

The disadvantages were also considered, and these are:

- Water has less heating (latent) energy available compared to steam.

TF Design launches new hard woods drying solution

The TF Design commissioning crew members, Andre van Heerden, Dane Wrigley and Brian van As, doing final checks on the turnkey project at Yaverland Timrite sawmill.
• Due to the reduction in latent heat, drying times are longer.
• Heat losses occur in the piping system.

Installation

TF Design installed an elevated water tank close to the boiler to increase the boiler’s heating potential. The added height of the elevated water level increases the pressure inside the boiler, resulting in slightly higher water boiling temperatures.

A step-grate furnace was installed in front of the boiler to serve as a heating source. A mixture of wet and dry biomass, which is produced by Yaverland Timrite’s processes in its wet and dry mills, is used as the source of fuel. TF Designs finds that step-grate furnaces are perfectly suited to efficiently combust a mixture of biomass.

Heat generated inside the furnace flows through the boiler by means of an induced draught fan. Thermal energy from the furnace is transferred to the water inside the boiler and the hot water is pumped through the heat exchangers inside the kilns.

Control

The key requirements for a kiln and hot water boiler control system is to ensure safe boiler operation and ease of use, while optimising timber drying quality and efficiency. The TF Design control system provides the following advantages at an affordable cost:
• High quality drying with only the timber limiting the drying rate;
• Accurate proportional control of the thermal environment inside the kiln;
• Customisable 10-step drying schedule;
• Effective and safe boiler and biomass combustion control;
• Adequate alarms and warning systems for over-temperature conditions, temperature probe failure, etc.;
• Easy to operate, reliable and robust;

The installation of this turn-key solution is proving to be successful for Yaverland Timrite Sawmill’s management. They have increased their overall mill drying throughput and dried timber quality. This has increased their market range and accessibility and thereby their profitability.

TF Design’s eucalyptus timber drying solution satisfies the requirements of the southern African timber industry for a cost-effective and affordable timber drying solution. Their turn-key solutions can enable any sawmill to produce high quality timber, competitively.
Hillermann Sawmill in Wartburg, KZN, has successfully installed a new kiln and boiler with automated monitoring and control systems that are delivering excellent results.

When Hillermann Sawmills contacted Timber Soft to enquire about a new kiln and boiler, they decided to join forces with local drying experts, Bosman Dryers and Timber Soft. As with any new joint project, once the initial teething problems were sorted out the first batch of pine went through the kiln at the end of July 2017 and, according to Henco Viljoen of Timber Soft, the kiln is performing exceptionally well.

The kiln is 14.8m long and takes approximately 50 cubic meters of 38mm boards per charge. The all stainless-steel structure with stainless-steel heat exchangers will ensure corrosion-free operation for many years to come. The hydraulic main door lifting mechanism and solid I-beam rail makes it easy to lift and open the main loading doors.

Viljoen says the system includes:
- 12 x 3kW fully reversible aluminium fans each powered by its own variable speed drive that enables the kiln to run at a low electricity consumption of only 35 Amper.
- A 1500kW wood fired boiler with its 7.5kW circulation pump that transfers the energy to the kiln, enabling the kiln to get up to its operating temperature of 80 degrees Celsius within 3-6 hours, steadily rising to 5 degrees C within 12 hours.
- Rigid stainless-steel baffles that channel nearly 100% of generated air flow evenly through.
the timber stacks. Air speeds of 2.6 meters per second measured on the exit side of the stacks only varied by as little as 0.2 meters per second across the entire length and height of the stacks.

The PLC with touch HMI screen at the kiln gives a brief overview of the kiln conditions and set points, boiler temperature and set points as well as wood moisture content. It also shows fault conditions like wet bulb dry, VSD/motor trip, boiler temperature low, boiler pump trip, and moisture content reached. When the kiln is stopped, all actions including opening and closing of vents and fans forward and reverse can be manually tested from the HMI screen.

The controls work on a three-phase schedule:
Phase 1 – Heat up
Phase 2 – Above fibre saturation point
Phase 3 – Below fibre saturation point to dry.

The system automatically adjusts the vent set-point according to wood moisture content. All data is transferred wirelessly from the PLC to a PC running SCADA software. Settable parameters can be changed from the SCADA software after successful user login with high enough privileges.

Fault / alarm conditions are sent to predefined cell phone numbers and email addresses directly from the PLC via SMS and email through an internet enabled network. The kiln reloading is quick and is assisted with 15m of track on either side of the kiln. The kiln is reloaded and started in under 30 minutes.

Viljoen says drying times are comparable and better than some steam installations. They are drying 38mm boards in less than 40 hours, 50mm in 48-52 hours and 76mm average less than 76 hours. When drying only 38mm material, it equates to approximately 950 cubic meters of 38mm boards dried per 30 day month.

‘With such drying times, going the hot water route instead of steam also means a big capital saving in erecting a drying plant, and eventually will result in huge savings compared to steam in terms of regulatory mandatory safety inspections and water treatment,’ comments Viljoen. He says Timber Soft specialises in kiln controls and the optimisation of the drying process. ‘To date, kilns with Timber Soft controls dry just over 300 000 cubic meters of lumber per annum. This includes pine boards and poles as well as hardwoods like saligna, karri, blackwood and indigenous timber.

‘Timber Soft also supply ISPM15 systems and has successfully improved the performance of local and international kilns by implementing a control strategy that, after initial calibration requires very little operator decision making, other than starting and stopping the kiln. The system is also fully integrated with Dryzone in-kiln moisture measurement and is able to send out system notifications of any condition monitored via email and SMS.’
Earlier this year EWD met a tight deadline to install and commission its first machines in Ireland at the Murray Timber Group’s Ballon sawmill in County Carlow.

“We looked at several optimising edger systems in Germany and we really liked EWD’s products,” explains the Murray Timber Group (MTG’s) John Murray. “We opted for one of the fastest EWD systems, the high-performance OptiDrive TAE edger optimiser with skew and slew saw box. It has a feed speed of up to 420m/min and a performance of up to 65 boards per minute.”

MTG is a family-run business established in 1977 and Paddy Murray and his sons Joseph, John, Patrick, and Dennis have developed it into one of the largest, most progressive, and flexible sawmills in Ireland. They provide employment for 165 people at their operations that are spread across two production facilities, one in Ballygar, County Galway, and the other in Ballon, County Carlow. The group produces garden decking, pallet and packaging, timber fencing, pressure treated timber and construction timber.

With world class processing facilities capable of processing more than one million cubic metres of logs annually, MTG is presently harvesting, transporting, and processing over 520 000 cubic metres of timber a year, of which the Ballon plant is responsible for 220 000 cubic metres a year.

The company’s plants are ideally located to meet its key markets in the Ireland and Great Britain. All its construction timber is kiln-dried and graded in accordance with the highest standards to ensure adherence to specified moisture content regulations.

At Ballon, a reducer quad bandsaw with secondary resaw group and two optimising board edgers are used as the main machines. The new OptiDrive edger from EWD replaces both edger systems at the sawmill, however, one of the existing lines was retained for use as a backup machine.

EWD was founded in 1872 and has two production sites in Germany and employs 216 people who produce the company’s internationally renowned bandsaws, edger systems, chipper canters, profiling lines, frame saws, and conveyors.
Perfect execution
Murray stopped the old edger on 13 December 2016 while production continued with the second edger to minimise losses. “We were able to maintain 60% of the production and had a very ambitious, but feasible installation schedule,” says Murray.

“The planning and the execution were perfectly managed by EWD who had to complete the job in time for start-up on 24 January 2017. The installation and commissioning was successfully completed within seven weeks, including a break over the Christmas period, and full performance was reached just one week after commissioning.”

“The new system can process boards with lengths ranging between 3.7m and 6.3m. The sawing height is between 16mm and 55mm, whereas Murray’s main size is 44mm,” explains EWD’s Thomas Lang who managed the project at MTG with his colleague Christopher Wolf.

The unedged board widths range from 120mm to 550mm. After separation, the boards can be turned on the manipulation table, cross-cut or rejected via a sorting flap, on demand. The boards are then transported laterally through the scanning system, which determines a preliminary board shape and open face, and the boards are then placed optimally at the infeed table.

Considerable increase in performance
The OptiDrive is EWD’s high-performance optimising edger with a feed speed of up to 420m/min. To accelerate the boards to this speed, all centring rollers and every second pressure roller are driven. In linear mode, the boards pass through a scanning system where two cameras scan each board from top and bottom, making 800 scans per second to ensure perfect board data. Within split seconds, the Microtec optimisation system calculates the best edging solution for the skew and slew EWD TAE edger.

“This machine enables a skew and slew solution of up to 15cm on a length of 6m,” explains Lang. This gives Murray a lot of options for optimisation, enabling the company to increase the yield.

“Along with improvements to the bandsaw and the sorting line, we expect an increase of around 20% in output, due to the new edger,” says Murray. “For 4.8 m long boards, the output is around 50 boards per minute.”

MTG uses the OptiDrive with a three-saw edger to edge and rip boards. The edging separation takes place automatically and the boards are transported on a chain, which positions them according to the edging solution. The edgings fall on the left and right onto the vibrating conveyor.

“A fantastic investment”
John Murray is positive that the EWD edger is the best solution for the sawmill: “The performance of the edger is great. It provides us with better product quality and we have been able to increase efficiency at the same time. We process considerably greater quantities with just one system than we did a few months ago with two. It is a fantastic investment.”

The pictures were supplied by Holzkurier.
Environmental impact: Biligom beats the competition

In a world that is becoming increasingly obsessed with the environmental impact of the things we do – and with good reason - it has become necessary to evaluate every aspect of our lives to ensure that we leave as small a carbon footprint as possible.

Buildings are major emitters of carbon dioxide and contribute significantly to global climate change. Governments, architects, developers and the general public are under an increasing obligation to make environmentally responsible decisions when it comes to selecting building materials and methods.

South Africa was the first country in Africa to implement a locally developed green building rating tool and has a growing number of rated green building projects.

At the same time, however, most manufacturers who promote materials and buildings as green and environmentally sound do not have concrete evidence in support of these claims.

A recent research article, titled “The Potential of South African timber products to reduce the environmental impact of buildings,” by Philip Craford, Melanie Blumentritt, and Brand Wessels from the University of Stellenbosch, investigated the actual carbon footprint left by South African pine, light gauge steel (LGS) and Biligom – a new moist, glued, finger jointed and treated eucalyptus product for the manufacture of truss systems, to find out what their impact on the environment is. The research article appears in the South African Journal of Science.

It is estimated that up to 70% of all sawn timber produced in South Africa is utilised in buildings – specifically in roof truss systems. In addition to this, light gauge steel truss systems are currently gaining a lot of market share due to the low current prices of steel.

A recent combined life-cycle assessment (LCA) and cost study found that LGS requires at least 6.65 times more energy to manufacture than wood.

The potential environmental impact of different roof truss systems. The study by Craford et al compared the potential impact of roof truss systems typically found in medium to low income house designs in South Africa.

Environmental impacts were compared over 11 different impact categories where they presented...
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More variety and design freedom, the roof truss designers choice
The cost effective option
the potential environmental impacts of the modelled products and then discussed adjustments and assumptions made with regard to the availability of South Africa-specific life cycle inventory data and the validity of the obtained results.

A 42-m² RDP house and a 168-m² single-storey family house were chosen to represent commonly found house sizes in the South African lower- and middle-income market. Concrete tiles were selected as the roof cover material.

The roofs were designed with a 17.5 degree pitch and for a 50-year service life in the Western Cape Province of South Africa.

The roof structures were calculated and designed by MiTek South Africa (Pty) Ltd engineers (Cape Town) according to national timber construction standards.

MiTek design software provided a detailed material and cutting list for all structural components per design, either per mass or per volume.

Results

Upon the assessment and comparison of the three roof truss assemblies, it was found that Biligom has the smallest environmental impact in most categories, closely followed by Pine. LGS was found to have the highest environmental impact.

Pine showed elevated human toxicity impact values because of the CCA treatment process, compared to the Biligom Tanalith-E treatment process.

Over the last decade, carbon sequestration, carbon footprints and carbon emissions have become globally familiar terms. GWP (Global warming Potential) is often one of the key impact factors when assessing the environment performance of building materials and Buildings.

Timber is unique in the sense that trees sequestrate carbon dioxide during growth.

Overall, the study has shown the potential advantage of using local timber products to reduce the environmental impact of the truss and building industry in South Africa, with Biligom taking the lead as the material with the least impact on the environment.
All users of structural timber are urged to be aware of national legislation around the use of structural timber and not make use of any imported or locally produced timber that does not comply with South African standards and requirements.

Amanda Obbes, national coordinator of the Institute for Timber Construction South Africa (ITC-SA), the professional body for the engineered timber construction industry, has issued a notice on compliance of laminated timber beams to be used for structural purposes.

“All laminated timber beams must comply with the minimum requirements outlined in SANS 1460: Laminated Timber. In addition, all laminated timber beams must be clearly stamped by the supplier, indicating the grade and the relevant accredited authority, says Obbes.

It is a requirement in terms of SANS 10163: The Structural use of Timber and the National Building Regulations, SANS 10400, that all structural timber comply with the relevant product specifications.

The only way to demonstrate this is by means of certification by an ISO 17065-accredited certification body or by means of a registered structural engineer. There has to be recorded evidence of controls to support this, including the type and classification of structural adhesive and approval certificate of each batch, test results of the MOR (bending stress) and MOE (stiffness), grade classification, and markings, to name a few.

“It is the responsibility of architects and engineers to call for certified structural timber, the relevant inspectors to ensure compliance, and design engineers, architects and truss manufacturers to specify products they can trust,” explains Obbes.

“Making use of laminated timber products for structural purposes without the necessary certification and backing amounts to irresponsible business and building practices. The ITC-SA urges the trade and public to make use of structural timber from the formal trade and that bears the necessary marks.”
A be Stears, managing director of South African Technical Auditing Services (SATAS), has strong views on the process of manufacturing and the use of laminated timber for structural applications. In a recent interview he said the following:

Unfortunately, few people know how to utilise structural laminated beams properly. There are good reasons for the existence of national standards that govern the manufacturing and use of laminated timber, and safety is one of them.

For example, in some instances, laminated beams are used in a structural application for aesthetic reasons without taking cognisance of the load bearing ability or capacity of such units. Random tests conducted at the University of Pretoria on laminated beams reveal that a sizable percentage of beams do not comply with the strength requirements for Grade 5 as published in SANS 10163.

Failures are inevitable

Certified and legal laminated beams must be manufactured under controlled conditions and processes. Such beams must be marked with information listing the stress grade, certification mark, trade name and application class. SATAS is one of only two SANAS-accredited certification bodies that can legally perform certification on structural laminated timber.

The manufacture of structural laminated beams in compliance with SANS 1460 is a costly process; and some contractors prefer to take short cuts or tender “cheap” quotes by using inferior imported or “backyard” products. If the cheaper alternative product is used, failures could result. This would only occur a few years after construction and in most instances the owner of the structure would have to take responsibility for the repair and subsequent costs.

Engineered product

A laminated beam is an engineered product and the different components must meet certain requirements prior to assembly.

The first component is the wood. Timber from pine and eucalyptus species is normally used as laminates in the final product.

Proper drying, grading/selection and machining are very important. Finger joints in laminated beams must comply with the requirements of SANS 10096.

The second component is the adhesive used to bind the laminated product together. Adhesive systems are specially designed and tested for use in specific application classes, from exposed exterior to interior dry. Adhesive for use in laminated beams are under strict control and must comply with the requirements of SANS 10083 part 2: Adhesive for wood part 2: requirements for structural applications.

A structural beam manufactured with adhesive designed for interior dry use will not last long if used in an exterior application. Proper manufacturing process control is vital as the use of the correct adhesive and timber is worthless if not correctly applied.

Crucial factors and conditions such as timber moisture content, and adhesive manufacturer requirements such as press time, pot life and spread rate are vital to ensure a quality end product, and this is only possible if proper production control measures are maintained.

Once the manufacturing process is complete, grade compliance needs to be verified or established. This is achieved by means of a Proof Load test.

During this test the relevant data is recorded to determine the modus of elasticity (MOE) compliance. Adhesive bond integrity tests are performed on samples to determine compliance in the total manufacturing process.

Traceability

The use of laminated beams in a structural application without traceability and product certification is a recipe for disaster. It is the responsibility of engineers, architects and designers to insist on certified laminated beams for use in a structural application."

Two new directors for ITC-SA

The ITC-SA, South Africa’s professional body for the timber construction sector, appointed two new directors to its board at its recent AGM. Prof Walter Burdzik structural engineer at Unilam Pressings, and University of Pretoria academic, timber construction engineer and course developer, and Werner Slabbert Jnr, managing director of Eco Log Homes, bring with them a wealth of knowledge and experience in the arena of engineered timber construction.
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One of the drawcards to the Helderberg Mountain near Stellenbosch is The Bush Lodge at Hidden Valley wine and olive farm, where its timber frame construction was an ideal solution to the challenges posed by the sloping, hard-to-reach site.

The owner of Hidden Valley, Riaan Stassen, chose architect Francois du Toit and the team at Rustic Homes to design and build the two luxury wooden cabins, including a deck and pool area seamlessly connecting the two, above the farm’s olive groves. The site chosen for construction of the main lodge and two-bedroom cottage was along an overgrown and unused farm road, which was the only level piece of available land on the steeply sloping estate.

Thanks to its lightweight properties and ease of prefabrication off site, the structural components of the buildings could be transported to site and erected by Rustic Homes with minimal impact on the surroundings and a relatively brief turnaround time compared with traditional building methods.

Untreated balau (Shorea laevis) timber was used for the decking component of the project and has been left untreated to weather to an attractive natural silvery grey. Exposed timber roof trusses lend airy volume to the interior, and rafters extending from the inside to the exterior contribute a sense of simple continuity to the project.
Vermont Sales has released Tork Craft’s two new laser distance meters the TCLDMO0D8 with a 40 metres range and the TCLDMOOS6 with a range of 60 metres.

These units are pocket sized, have a measuring accuracy between 1.5mm and 2mm, supplying readings in metres, inches and feet, a four line display with backlight, continuous measurement offerings, single distance and area measurement, plus large easy to use buttons both units are easy to operate and come with their own batteries.

The TCLDMO0D8 has a removable pocket clip and the TCLDMOOS6 comes with a belt pouch and handy screwdriver. Additional features included in the TCLDMOOS6 unit, are area and volume measurements, addition and subtraction, a single distance and area measurement for both minimum and maximum readings, a historical data feature, and an end piece and calibrated scale. It also has a shatterproof screen and a lateral bevel edge design.

New Laser distance meters from Tork Craft
Unlike traditional earplugs, Plugfones combines comfortable, noise-reducing earplugs with high-quality audio speakers. The resulting hybrid earplug tips fit securely in the ear and provide hearing protection and a good listening experience that allows in outside low-level noises while machine operators listen to music, audiobooks, podcasts or a mobile phone.

“We are excited about the unique and effective earplug-earbud hybrid Plugfones brand, and have recently launched the Contractor and Ranger models,” says Ryan Hunt sales director of Vermont Sales, the local supplier of the earplugs.

“Following this model launch a range of exciting earplug phones will shortly be introduced. Judging from the success Plugfones has had worldwide in numerous industries, we are sure they will be a success in South Africa too,” says Hunt.

He explains that Plugfones offer four main benefits over traditional earplugs:

• In-ear noise reduction: Plugfones have certified Noise Reduction Ratings (NRR) of 23dB and 26dB depending on the plugs used.
• Sound: Plugfones help make work enjoyable by allowing you to listen to what you want rather than your noisy environment. Almost all Plugfones models feature tuned speakers that emit fuller, more dynamic sound to complete your listening experience.
• Comfort: Comfort is key to choosing earplugs. The earplug-earbud hybrids are designed to fit all ears, keeping ears irritation-free, and they can be worn for hours at a time. The soft foam and silicone earplugs are interchangeable and can be replaced when they become dirty or worn out.
• Innovation: Plugfones solve both issues of boredom and the need for safety compliance in the workplace. They help ensure workers are protected from hazardous noise levels while boosting their productivity and morale.
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High Frequency Heating (HFH), the Johannesburg manufacturer of dielectric heating systems based on radio frequencies (RF), is experiencing an upsurge in demand for its curing solutions from the furniture and kitchen manufacturing and shop fitting industries.

HFH was established in 1986 by Richard Bayley to design and manufacture RF laminators primarily for the timber processing industry. However, a few years later this market took a plunge and its recovery was slow.

Luckily, HFH had already started manufacturing RF welding machines for the plastics industry, and for more than 25 years this has been the focus of the business.

Recently, there has been an increase in the number of enquiries and orders from the timber industry. According to the team at HFH this can be attributed to the need for wood-based product manufacturers to be competitive by increasing efficiencies and speeding up production processes while maintaining the highest levels of quality.

HFH has been able to draw on the extensive experience and knowledge base of its qualified engineers and technicians, and its computer aided design / manufacturing (CAD/CAM) capabilities, to meet the needs of this market. The most recently completed projects are at Regency Office and Knysna Leisure Industries.
Dielectric heating is based on the principle of applying high-frequency electromagnetic fields to the material to be heated, or welded in the case of PVC. This method is known as high frequency (HF) or radio frequency (RF). The frequencies allocated for industrial use are 13.56MHz, 27.12MHz and 40MHz.

The molecules of the material being processed act like bar magnets and polarize themselves with electromagnetic fields. When this field is reserved, the molecules realign themselves, for example, at a frequency of 27MHz, this field reversal occurs 27-million times a second. This rapid realigning process causes internal friction and therefore heat.

The HFH range of equipment uses RF in the joining of timber to speed up the curing of adhesives, during, for example:

- Edge-jointing for the manufacture of boards or shelving from narrow solid timber sections
- Bulk laminating
- Edge-lipping
- Carcass or assembly jigs

Radio frequency heating is a technology that is currently being employed worldwide, providing industry with the opportunity to improve energy utilization, increase production and enhance product quality. High frequency electromagnetic energy is used to uniformly generate heat within a product thus reducing thermal stress.

Radio frequency is well suited to satisfy process heating requirements in a number of sectors. One such sector is the timber industry, where it is often used for drying and gluing applications. Radio frequency wood bonding is being increasingly employed to improve production rates by reducing adhesive setting times from hours to minutes.

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The second generation of the successful Weinig Conturex system comprises a wide range of CNC centres for window and furniture production, all of which are based upon the same principle of the patented clamping table. Visitors to the Weinig stand at Ligna this year will have seen the Conturex technology in action.

The modular machines range from a compact solution to a twin-track system solution that can process two work pieces in parallel. A master computer control system is flexible and can network any number of axes to facilitate mass production systems and single-item batches.

New features on the integrated Conturex C125 Vario include the mechanised twin-track infeed system, the four Vario single-clamp tables, each with two clamps, and the two interpolating 5-axis heads.
Conturex C125 Vario Furniture
Weinig has added a new offering for furniture and frame construction to the Conturex CNC system. The C125 Vario Furniture is based on proven and patented clamping table technology, and combines maximum output with optimal flexibility. It is a double-part system with special individual clamping technology, and parallel charging and unloading.

This allows an output of two parts per minute in furniture applications. Two interpolating 5-axis heads provide optimal flexibility with complex curved parts. The large parts buffer for up to 240 furniture components makes provision for long-term unmanned production.

In the background is an integrated software solution, from idea to finished workpieces. Besides the benefits of a standardised dataset for all production processes, including peripherals integration into the Weinig Solid Woodwork Flow (WF) system ensures dynamic process sequences optimised in real time.

WF includes parts identification via different processes, workpiece data administration including an interface with angle units, and monitoring via mobile and desktop apps. Weinig says the comprehensive digital A screenshot of the Weinig CAM system. It also offers a fully-fledged drawing programme with smart commands and 3D 5-axis interpolation. All standard CAD formats, such as dxf, dwg, solid, stl, Rhino and parasolid, are supported.
architecture makes WF ideal for virtual commissioning. The operator benefits from short throughput times and elimination of sources of error.

One highlight of the C125 Vario Furniture is the new Weinig computer aided manufacturing (CAM) system. This 3D-CAD/CAM system can be integrated into every Conturex going forward. As a geometry-based system, Weinig CAM offers a fully-fledged drawing programme with smart commands. All standard CAD formats, such as dxf, dwg, solid, stl, rhino and parasolid, are supported.

Unlike conventional systems that do not allow 3D surface processing, Weinig CAM includes 3D 5-axis interpolation. Other customer benefits include reliability thanks to the ability to do detailed simulation for bulk and to single-item batches, simple operation via macro programming, and modular design from 2D to 3D interpolation.

Weinig’s long-term objective with this latest stage of development is to offer individual automation solutions for a wide variety of solutions in the furniture sector.

FSC investigates charcoal supply chain

After receiving allegations from various stakeholders questioning the integrity of Forest Stewardship Council (FSC)-certified charcoal, FSC and Accreditation Services International (ASI) initiated an initial investigation into the charcoal supply chain.

Enough evidence of misleading claims was found to justify a more comprehensive investigation into the charcoal product type, which is currently taking place. However, action is being taken as the investigation continues, and nine certificate suspensions have already been implemented.

Performing an in-depth investigation of charcoal means that the entire supply chain is mapped to identify mismatches and whether the volume of products sold is plausible when considering the volume of inputs. FSC is dedicated to ensuring the integrity of its supply chains, endeavours to take immediate and rapid action when allegations of this nature are brought to its attention.
The marriage of innovative materials, passionate people, world-class manufacturing equipment and, most importantly, design capabilities and good design sense has made The Kitchen Studio one of the leading designers and manufacturers of kitchen and home furniture in South Africa.

The ethos of quality and caring is communicated by everyone who works for the family-owned company, from factory workers in the small KZN midlands town of Richmond, to the director, Vinesh Maharaj, who says he is still astonished by the non-stop organic growth potential of the business.

“I joined a kitchen company in May 1982 and 12 years later, when we were in the grips of the euphoria of the liberation of our country and the first democratic elections, we decided that it would be a promising idea to set up a business to help people who want to do alterations and additions to their existing kitchens,” says Vinesh. The Kitchen Studio opened on 1 November 1994 and, from day one the response and unprecedented demand was unbelievable. “We had to abandon our initial plans and launch directly into designing and manufacturing customised kitchens. By the end of the first month we had created jobs for 30 people.”

Vinesh describes this growth as evolutionary rather than based on a traditional five-year business plan approach. “We do not have the luxury to sit down and debate which way we want to go, the market tells us what it wants us to do and we simply make it happen.” Today, there are outlets for the Kitchen Studio products throughout the country, and the Durban showroom is the largest.
**Trade Prices - Not Available at Our Showrooms. Deliveries Starting from Mid Jan 2018**

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**List of Units**  
**K1**

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<td>R 195</td>
<td>R 195</td>
<td>R 195</td>
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<tr>
<td>Add on bu end 600 deep</td>
<td>R 71</td>
<td>R 195</td>
<td>R 242</td>
<td>R 130</td>
<td>R 130</td>
<td>R 130</td>
<td>R 130</td>
</tr>
<tr>
<td>Facing panel 7/8 high x 2703</td>
<td>R 774</td>
<td>R 2114</td>
<td>R 2621</td>
<td>R 1409</td>
<td>R 1409</td>
<td>R 1409</td>
<td>R 1409</td>
</tr>
<tr>
<td>150h aluminium skirting (4 lengths)</td>
<td>R 1188</td>
<td>R 1188</td>
<td>R 1188</td>
<td>R 1188</td>
<td>R 1188</td>
<td>R 1188</td>
<td>R 1188</td>
</tr>
</tbody>
</table>

**TOTAL excl. VAT**

<table>
<thead>
<tr>
<th>14mm</th>
<th>18mm</th>
<th>14mm</th>
<th>22mm x 60mm wide</th>
<th>22mm x 60mm wide</th>
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</thead>
<tbody>
<tr>
<td>R 13 856</td>
<td>R 19 100</td>
<td>R 21 309</td>
<td>R 16 844</td>
<td>R 24 160</td>
</tr>
</tbody>
</table>

**Specifications**

- **Hinges**: Blumotion Soft Close
- **Drawer Runners**: Blum Metabox with Soft Close
- **Shelving & Carcasses**: PG Bison V313 Water Resistant White Melamine
- **Carcass Edging**: Same as door edging
- **Shelf Edging**: 1.3 ABS
- **Backs**: White Masonite
- **Plinths**: Water Resistant
- **Legs**: 150mm Plastic Adjustable
**List of Units**

<table>
<thead>
<tr>
<th>Unit Description</th>
<th>14mm</th>
<th>18mm</th>
<th>18mm</th>
<th>14mm</th>
<th>22mm x 40mm wide</th>
<th>22mm x 60mm wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Units: 72h+150 plnish</td>
<td>PVC Wrap on MDF</td>
<td>Niemann Genesis Gloss White</td>
<td>Sano Acrylic</td>
<td>Veneer on MDF</td>
<td>Solid Shaker</td>
<td>Solid Shaker</td>
</tr>
<tr>
<td>Wall Units: 100th with 2 adj shelves</td>
<td>Choice of 10 Colours</td>
<td>Niemann Polygloss</td>
<td>HPL</td>
<td>oak, beech, cherry, walnut</td>
<td>with 12mm</td>
<td>with 12mm</td>
</tr>
<tr>
<td>Tall Units: 280h x 150 plnish</td>
<td>Textured Board</td>
<td></td>
<td>Niemann</td>
<td>Veneer Centre</td>
<td>Veneer Centre</td>
<td>Veneer Centre</td>
</tr>
<tr>
<td>1. 600 bu</td>
<td>R 697</td>
<td>R 898</td>
<td>R 991</td>
<td>R 834</td>
<td>R 1363</td>
<td>R 1474</td>
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<tr>
<td>2. 300 bu</td>
<td>R 512</td>
<td>R 612</td>
<td>R 657</td>
<td>R 580</td>
<td>R 842</td>
<td>R 897</td>
</tr>
<tr>
<td>3. 600 bu – 2 x drawers, 1 x pot drawer</td>
<td>R 1004</td>
<td>R 1204</td>
<td>R 1295</td>
<td>R 1140</td>
<td>R 1664</td>
<td>R 1775</td>
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<tr>
<td>4. 600 uco housing</td>
<td>R 426</td>
<td>R 457</td>
<td>R 471</td>
<td>R 447</td>
<td>R 528</td>
<td>R 545</td>
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<tr>
<td>5. 900 bu</td>
<td>R 993</td>
<td>R 1294</td>
<td>R 1432</td>
<td>R 1198</td>
<td>R 1989</td>
<td>R 2155</td>
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<tr>
<td>6. 450 grocery cupboard</td>
<td>R 1674</td>
<td>R 2154</td>
<td>R 2374</td>
<td>R 2001</td>
<td>R 3264</td>
<td>R 3530</td>
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<tr>
<td>7. 450 b/u cupboard</td>
<td>R 1490</td>
<td>R 1970</td>
<td>R 2190</td>
<td>R 1817</td>
<td>R 3079</td>
<td>R 3345</td>
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<tr>
<td>8. 650 x 550 high tu above fridge</td>
<td>R 591</td>
<td>R 809</td>
<td>R 909</td>
<td>R 740</td>
<td>R 1313</td>
<td>R 1434</td>
</tr>
<tr>
<td>9. 900 tu</td>
<td>R 918</td>
<td>R 1335</td>
<td>R 1525</td>
<td>R 1202</td>
<td>R 2299</td>
<td>R 2307</td>
</tr>
<tr>
<td>10. 900 tu</td>
<td>R 918</td>
<td>R 1335</td>
<td>R 1526</td>
<td>R 1202</td>
<td>R 2299</td>
<td>R 2307</td>
</tr>
<tr>
<td>11. 4 x tu finished ends</td>
<td>R 180</td>
<td>R 864</td>
<td>R 1124</td>
<td>R 504</td>
<td>R 504</td>
<td>R 504</td>
</tr>
<tr>
<td>12. 3 x tall finished ends</td>
<td>R 663</td>
<td>R 3174</td>
<td>R 4128</td>
<td>R 1851</td>
<td>R 1851</td>
<td>R 1851</td>
</tr>
<tr>
<td>13. 1800x600x100 high HPL Breakfast Bar</td>
<td>R 1890</td>
<td>R 1890</td>
<td>R 1893</td>
<td>R 1890</td>
<td>R 1890</td>
<td>R 1890</td>
</tr>
<tr>
<td>14. 1 x bu finished end</td>
<td>R 62</td>
<td>R 296</td>
<td>R 389</td>
<td>R 173</td>
<td>R 173</td>
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<tr>
<td>15. 150h aluminium skirting (4 lengths)</td>
<td>R 1188</td>
<td>R 1188</td>
<td>R 1188</td>
<td>R 1188</td>
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<tr>
<td><strong>TOTAL, excl. VAT</strong></td>
<td>R 13206</td>
<td>R 19480</td>
<td>R 21194</td>
<td>R 16767</td>
<td>R 24246</td>
<td>R 25375</td>
</tr>
</tbody>
</table>

**Kindly note of the following:**

1. Prices exclude vat, delivery, installation, worktops, sinks, taps and appliances.
2. Prices on sinks, taps, Sige chrome fittings and Falmec / Elica extractors are available on request.
3. Special sizes can be manufactured at a surcharge.
4. All products are edged using Polyurethane (PUR) adhesives and Jowat adhesives.
5. Prices are valid until 28 February 2018.
6. Door to door delivery can be arranged at an extra charge.
7. All cupboards are supplied flat packed in labelled cardboard boxes - ready to assemble.
8. Hinges and drawer runners can be upgraded to Hettich Sensys and Hettich Innotech at an extra charge.
9. All white melamine shelving and carcasses are PG Bison white V313 water resistant.
10. Should you require prices on other layouts please email a detailed drawing and with elevations/perspectives.
11. Various other door frontals available. We can also supply granite, quartz & marble cut to size.
in South Africa, while the new Midrand showroom will be Gauteng’s largest. There is even have a showroom in Ghana. The company’s brands include Kitchen Studio, Semble-it, Kitchen Spectrum, Crestwood kitchens, AGK (Alpine German Kitchens), and Granite Studio.

New manufacturing and packaging technologies

The Kitchen Studio employs 460 full time people and has four manufacturing plants for board-based, solid wood, granite and quartz products in South Africa, covering a total of more than 20 000 square metres. Each factory is equipped with the latest manufacturing technologies and adequate warehousing for bulk purchasing and stockholding.

The company is preparing to launch its new line of specialised, flat-pack kitchens and has upgraded its board products manufacturing facility in Richmond. This is the site of several older, and more recent installations, by Austro’s branch in Durban. Apart from the edge banding machines, the vast space is home to three Selco beam saws, the Biesse Rover-A CNC machine, the Comil automated carcass press fitted with a robotic unit, the new Panotec box making machine, and a Neleo orbital plastic wrapping machine.

Brian Downs, director of Austro in KZN, explains that the Selco, Rover and Comil machines are all manufactured by Italy’s Biesse Group that is represented in South Africa by Austro. The Panotec is also an Italian machine and the Neleo is made by Spain’s Plasticband company.
The Rover Gold is a compact machining centre designed for high performances capable of meeting various levels of production requirements.

It’s the ideal machine for those who require a flexible and reliable solution.

• A single processing centre for all types of machining operations
• Quality finishing
• Reduced set-up time
• Intuitive technology
• Customisation of machine for different production requirements
Although Austro did not supply the Neleo at The Kitchen Studio they have been awarded the agency for the equipment.

According to Vinesh the service they have received from Austro has been impeccable. “We have dealt with Austro since the very beginning. They supply a wide range of heavy duty, good and reliable machines, which are expensive but worth it. We believe successful businesses are built on relationships and we have an excellent relationship with Brian and his team.”

The three Biesse Selco SK4 beam saws and their software are easy to set and operate and produce the quality of cuts demanded by Kitchen Studio. The most recent arrival is the Selco SK4 Twin Pusher, which Brian describes as “a beauty of a machine because it is two beam saws in one and only takes up the space of a single machine.”

It consists of two complementary pushing devices so that rip and cross cuts can be made at the same time. An additional stop allows independent cutting of strips of up to 650mm wide.

The beam saws are equipped with labelling software that creates individual bar-coded labels and prints them so that the operators can attach them to each component. This forms part of Kitchen Studio’s quality assurance programme to keep track of every component throughout the production, assembly, and packaging processes.

Materials that inspire design

Quality is far-reaching at Kitchen Studio. It is not just about machines cutting straight and true, it is also about innovative materials, superior design, and professional relationships. “Our designs are driven by
the materials we use, our knowledge of our customer needs and our openness to innovations," Vinesh explains.

“We are constantly researching new materials, fittings, fixtures and hardware, and travel widely to find novel resources. The developments in Italian surface designs and finishes, and German fittings and fixtures, are inspiring and we have the knowledge to translate and convert them into desirable products for South African conditions and tastes.”

Today, the availability of information, materials and technology are very different from when Vinesh started designing kitchens 34 years ago. "Everyone with an internet connection can now follow international fashions and trends and see new materials," he explains.

“However, it is more difficult for smaller kitchen businesses to compete with larger companies because they simply do not have the economies of scale to manufacture, and space to store, the large volumes of raw materials and finished products they need."

“This is where we at Kitchen Studio can assist them. In 2018 we will manufacture complete fully-fitted flat-pack kitchens using materials small businesses would not normally be able to access. Some of these high-quality materials are sourced locally from PG Bison however we specialise in finding and importing top quality material, fixtures, fittings and cabinet accessories that are available and popular overseas but new to South Africa.”

By way of example Vinesh explains that they have recently introduced imported crystal boards that have been growing in popularity in the northern hemisphere since last year. This product lends a glass effect to door and drawer fronts, splashbacks, and side walls. It is available in high gloss and matte finish, and has much higher impact resistance is lighter in weight and is much easier to work with than glass.

### It is all about the design

“The importance of informing clients about the availability and opportunities generated by material innovations has prompted us to employ three full time specifiers to assist interior designers and architects and introduce them to new material innovations, such as matte crystal finishes,” explains Vinesh. “We did a trial run and the interior designers we worked with were amazed at the alternatives there are to regular laminated and veneer finishes.”

Universities and technical institutions teach the principles of basic design to their students but this, according to Vinesh, does not make them designers. “Design flair comes from the individual and the onus is on them to broaden their knowledge of the availability, characteristics, properties and applications of new materials.

Our new business development managers can assist designers to hone their skills and abilities.”

Vinesh says the Kitchen Studio will keep developing and growing because of its core values of excellence in timeless design, material innovations, partnerships with technology companies like Austro, and nurturing good relationships with clients and staff.
The Kitchen Studio has invested in a Panotec (Box On Demand) CNC box cutting and creasing machine to produce customised cardboard boxes for its soon-to-be-launched range of flat-pack ready-to-assemble kitchens. Panotec is an Italian company represented by Austro in South Africa, which specialise in the production of customised cardboard boxes with batch sizes-1 to mass production.

It is easy to programme using its Boxlink Compack 2.5 software that automatically positions the cutting and score-cut slitting units longitudinally and transversely. Depending on the infeed and outfeed options selected it can carry out non-stop cutting, standard score-cut slitting, and even perforated scoring ones all without changing its tooling. The right-sized boxes reduce packaging volumes and ensure that the maximum number of packages can be loaded onto each truck, which results in a reduction of delivery runs.

Apart from the obvious advantage of being able to make their own boxes to order, the Kitchen Studio also finds the following advantageous:

- Freed up space, previously taken up by pre-made boxes, is now used for stock holding and raw material storage purposes
- Reduced waste caused by damage to stored boxes and product obsolescence that leaves inventory of stored boxes worthless.
- The average set up time is 2/3 seconds
- It handles corrugated boards from 2mm up to 7mm in all versions and weights

Boxes made to order just in time
Packaging can be a challenge if your products constantly change in size and are highly configurable or require customisation. “Box on Demand” is an approach to sourcing corrugated packaging for companies that ship a complex and shifting mix of products.

With our offerings you can easily and cost-effectively produce customer corrugated packaging in your own facility. Because you order raw, un-coverted material, your packaging cost are consistent across any configuration, quantity, or design.
Lansdowne Boards was established 26 years ago, and today is one of Cape Town’s market leaders and innovators, offering the latest products and services to its ever-expanding customer base.

It produces components for various facets of the furniture industry such as shopfitters, kitchen, bedroom and office specialists, exhibition/stand builders, right through to the DIY enthusiast wanting to make home improvements.

The core offerings have expanded over the years and today Lansdowne Boards can produce virtually any finished furniture component in the production quantities required and according to required specifications. This includes flat pack ready-to-assemble furniture components and decorative furniture fronts, and a wide variety of laminate flooring.

The company also offers value-added services such as specialist in-house 3D kitchen design, cutting, edging, and drilling using the latest technology to meet specific needs. Their fleet of delivery vehicles deliver orders directly to its customers, and the trained sales team are on hand for any after sales queries.

The company has invested extensively in manufacturing capabilities as well as research and development. The latest arrival on Lansdowne’s factory floor is the Weeke Vantage 100 CNC nesting machine.

Nesting is an efficient method of processing components out of large, raw boards. Rather than using two machines, a beam saw and a CNC, the nesting CNC allows the operations to be done on the one machine. It is particularly useful for the efficient production of shaped parts that require cutting, drilling, grooving or routing.

The Weeke Vantage 100 is a gantry style nesting machine with a powerful 12hp (9kW) HSK routing spindle as standard and there is an option to upgrade to a 16hp (12kW) unit. The Vantage 100 offers a pick-up tool-changing system from seven to 12 places dependent on the working field size.

It comes with the highly flexible matrix-pro table which has different vacuum cups available for secure and accurate clamping if individual parts need to be machined. The table design optimises the distribution of the vacuum and reduces leaks and transmission losses.

The narrow grid table combined with the clamping system is flexible and even unusual shapes can be processed due to the rotatable vacuum cups and, with the diverse types of vacuum blocks available, it is also possible to carry out
Lansdowne Boards invests in new technology to increase capacity

simple and quick horizontal processing on grid tables. The Vantage 100 can be used as a standalone cell, and when required, it can have units added to it such as lift tables and feeding conveyors to increase productivity. Alternatively, it can be fed by an automated storage system which delivers the required raw boards straight from stock as required.

The machine is programmed using one of the most established CNC systems available, woodWOP, which has more than 30,000 installations worldwide. This simple-to-use Windows-based software features a large graphics area with a three-dimensional view of the workpiece.

“This nesting machine maximises the usage of the board by nesting components as close together as possible, and drills, grooves and routs them without having to move the parts to another machine,” explains Ian Fuchs of Donald Fuchs Machinery, the supplier of the Homag Group’s range of Weeke products.

He continues: “Homag nesting software ensures that throughout the entire run the job is processed at maximum efficiency. It allows the operator to choose the best way to optimise the programs for either speed or yield.”

Optional software packages include woodNest Basic for manual nesting of shaped parts, woodAssembler which enables the construction of individual workpieces to finished objects, woodVisio, woodWOP DXF Basic and 3D CNC Simulator.

WoodEX for Africa 2018

Bookings for WoodEX for Africa 2018 are now open and exhibitors are encouraged to secure their space early. It will take place at Gallagher Estate in Midrand, Gauteng from 11-13 July 2018.
What is “Virtual commissioning”

Today, the process of designing and manufacturing furniture parts and components takes place in an industrial environment characterised by significant cost constraints, shortening of product life-cycles and strategies for rapid time-to-market.

This means the timeframe for designing and developing products is progressively tightening whereas the demands on planning accuracy and planning quality are growing. International woodworking machinery manufacturers who are driving the Industry 4.0 revolution have adopted the term “virtual commissioning” to describe the computer aided design and manufacturing CAD/CAM solutions.

According to Shay Shomroni, a manufacturing engineering software developer at Siemens PLM Software, “virtual commissioning is the practice of replicating the behaviour of a physical manufacturing environment with a software system.” The goal of the emulation is to provide a way for machine programmers to validate their PLC (Programmable Logic Controller) ladder logic and HMI (Human Machine Interface) files prior to pressing the start button in factory.

What are the benefits of Virtual Commissioning?
Automated and flexible manufacturing systems include sophisticated tooling, robots, transfer lines and other safety equipment and they are all controlled by PLC programmes. Shomroni says virtual commissioning allows one to debug PLC code in a virtual environment before downloading it to real equipment. By simulating and validating automation equipment virtually, one can confirm that they will work as expected and significantly reduce system start-up time. Manufacturers who have used virtual commissioning have reported reductions in engineering time by as much as 30 percent.

When to do virtual commissioning?
Shomroni points out that virtual Commissioning is not limited for a specific industry or manufacturing branch. “Whenever a company builds manufacturing systems or lines with a certain level of automation complexity, virtual commissioning should be considered. A typical virtual commissioning user will build manufacturing systems with one or more PLC and HMI devices, mechanical kinematic equipment, such as fixtures, conveyors, and rails. It is also recommended to consider virtual commissioning when robots and NC machines are installed in the system.”

How to measure the ROI of virtual commissioning?
Depending on the nature of the virtual commissioning implementation, return on investment (ROI) can be calculated. Shomroni says it is important to identify the expected values before committing to a project.

Some examples for potential savings and ROI calculation methods are:
1. Reduction in total time for the drafting process and the manufacturing process. Measure the actual time and compare with former projects.
2. Reduction in the amount of shop floor errors. Count errors and compare to former projects.
3. Reduction in the amount of tested failures. Measure the time it takes to approve start of production due to failures.
4. Reduction in waste of prototype parts. Calculate the actual cost savings due to reduction in damage to prototype parts.
5. Time to volume. Measure the reduction in time to production volume and its economic benefits.
The fictional brief for 2017 tasked students with transforming an ailing building within one of Johannesburg’s key parks, into a vibrant gastronomic restaurant, with an appreciation and understanding of urban regeneration. The restaurant needed to create a unique and seamlessly linked indoor and outdoor experience for the patrons.

The winning students for 2017 are:

First place
Stephanus Petrus Diedericks from the University of the Free State. He on a trip for himself and his lecturer to the 2018 Furniture Fair in Milan, Italy.

Second place
Margaux Loubser, also from the University of the Free State. She won a trip to the 2018 Design Indaba in Cape Town, plus R3 000 in cash.

Third Place
Camrin Plaatjes from the University of KwaZulu-Natal. Camrin won R10 000 in cash.

All remaining finalists received a R2 000 cash prize.

PG Bison’s managing director of Surface Innovations, Philip Roux, explained that the company “Wants to create an opportunity for new young designers to showcase their talents. We love seeing these designers coming up through the education system, and this competition creates an incredible opportunity and stepping stone for their careers.”
Biomass harvesting for energy short course (Presented by CMO)

8 November – Richards Bay Hotel
9 November – Ascot Inn, Pietermaritzburg
10 November – PG Bison, Ugie
14 November – Belvedere Manor Hotel, Belvidere Estate, Kynsna

Decorex Durban
21 - 25 March 2018 – Durban Exhibition Centre

ExpoForest 2018
11 – 13 April 2018 – Sao Paulo State, Brazil: www.expoforest.com.br

Decorex Cape Town
27 April - 1 May 2018 – CTICC

WoodEx for Africa
11 - 13 July 2018 – Gallagher Convention Centre, Midrand

Decorex Joburg
8 – 12 August 2018 – Gallagher Convention Centre, Midrand

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- Cartridge or granular form (Figs. 1 and 2) – the glue can be changed over in minutes.
- Changeover from EVA to PUR glue is also possible within the shortest time.
- And the entire system can also be completely cleaned in just a few minutes.

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