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Where is your Toyota?

The debate should be around finding a solution that hits the so-called “sweet-spot” between quality and affordability.

Once again, it has been a fascinating month working the wood beat, with the editorial team exposed to a host of interesting views.

Interestingly, we continue to see two schools of thought emerge in the forestry products value chain. On the one side, we see original equipment manufacturers (OEMs) and their agents stand fast on their views that state-of-the-art, premium equipment remains an ideal solution for troubling economic conditions.

They reason that advanced tech helps professionals improve efficiencies and lower total operating costs, despite the high upfront price of the solutions they offer.

On the other side, however, we see manufacturers from Asian countries challenge these views, providing cost-effective machines that lower access to much-needed equipment.

Noticeably, these machines are devoid of all the extra “bells and whistles” that while improving the overall performance of the kit, drive up the upfront costs of the machines.

What is apparent, however, is that there is a growing market for machines that are designed and manufactured in Asian countries.

However, I believe the real question to ask is where is your industry’s Toyota?

What gets the job done at a reasonable price with the correct back-up service to avoid downtime? What machinery brand bridges the gap between affordability and premium quality? This question is relevant in all of the sub-sectors of this industry, ranging from forestry all the way through to woodworking.

Surely, these are the questions that should be answered, and the focus of the debate?

There will always be a need in the market for a “sweet spot”. Why else would Volvo Trucks have the UD range in its stable? The brand is definitely associated with quality and backed by a strong dealership network. Importantly, it provides a cost-effective alternative for contractors who are tasked with hauling timber to the premium top-of-the-range gear synonymous with the Volvo Trucks marque. Over time, these companies are sure to be coaxed into enjoying the benefits offered by top-of-the-range marques as they grow and prosper with a machine that gets the job done at the right price.

The one benefit of tough economic conditions is that it forces change, and new thinking that is more relevant to the times in which we operate.

Markets change and so do the industries that support them, and I’m looking forward to watching the introduction of more solutions that attend to suppressed demand and volatile exchange rates, yet help customers seize control of rising inputs!

David Poggiolini - editor
Eastern Cape development agencies unveil R113 million forestry project

Years of careful negotiation and hard work has come to fruition with the official launch of a massive community based forestry commercialisation project spanning five sites in the Eastern Cape during May. By Johan Meyer

Spearheaded by the Eastern Cape Development Corporation (ECDC) and the Eastern Cape Rural Development Agency (ECRDA), the R113 million forestry commercialisation project, has thus far resulted in 2700ha of new afforestation across the five sites.

The sites, situated in Mkambathi in Flagstaff, Sinawo and Izinini in Mbazana, Gqikunga in Qumbu, and Sixhotyeni in Maclear, were established following the approval of a R83 million grant from the Development Bank of Southern Africa (DBSA) Jobs Fund in 2013, on condition that the additional amount is raised by the ECDC and the ECRDA, with an input of R30 million each.

“By the end of March 2016, R56 million had already been spent on the five projects,” says ECRDA CEO Thozi Gwanya. “By the end of the 2016/2017 financial year, an additional 1 000ha will be planted.”

According to Gwanya, an additional 15 800ha has been identified for new afforestation, which will require another R225 million to establish.

“This drive has already attracted the attention and active support of forestry giants such as KwaZulu-Natal-based SAPPI, who have identified some 30 000ha for new afforestation in the Eastern Cape by 2033.

“This is a fantastic opportunity for private and public sector investors to take advantage of the massive economic potential in the sector,” says Gwanya.

According to ECDC CEO Buhle Dlulane, some of the sites were located on land that formed part of successful land claims by the local communities, which made the process that much easier because the ECDC could negotiate directly with the communities involved.

“Strategic partners such as SAPPI and PG Bison were already assisting these communities,” says Dlulane. “Both these companies will be the main clients for the timber produced through the projects.

“The end goal is the commercialisation of communal forestry plantations. When they harvest they already have a market.”
“I have seen the change in the lives of people who joined before me. I have seen the way Sappi has built them up.”

Project Grow timber grower

In 1983, Project Grow started out as a tree-farming scheme aimed at subsistence farmers. It is now a successful job creation and entrepreneurship development model creating sustainable livelihoods in rural areas.

In 2015, more than 3,800 small growers and 41 community projects farmed over 22,022ha of Eucalyptus plantations and supplied 361,134 tons of fibre into our mills, resulting in R247 million going back into local communities. www.sappi.com
Eastern Cape development agencies unveil R113 million forestry project

Dlulane adds that the potential exists for a pole treating plant to be established where they will get feedstock from these community projects.

“At the ECDC we are excited to form part of yet another exciting catalytic initiative with a strong agro-processing element which seeks to propel the Eastern Cape’s manufacturing value proposition. The ECDC has deliberately positioned itself as a driver of such beneficiation efforts in the province,” says Dlulane.

“The forestry development partnership has a strong beneficiation and processing element which complements the ECRDAs primary production activities. The ECDC is equally pleased that this partnership is in a sector that holds significant economic potential and job creation prospects.”

For instance, in Sinawo in Mbizana and in Mkambathi, the community-owned forestry projects have already generated millions in revenue out of the old trees that are being felled. The five projects have already created 819 jobs.

SAPPI stakeholder relations manager, Dr Blessing Karumbidza, says the projects sell their timber to SAPPI Mills through SAPPI Forests.

“Part of the agreements we have with the communities is that they only commit 70% of their timber to SAPPI. The remaining...”
Professional cutting power

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Eastern Cape development agencies unveil R113 million forestry project

EXRDA Forestry Manager Nkosipendule Quvile

30% provides flexibility for the community forestry projects to establish a mill in the Pondoland area, consisting of a pole treating plant which they can supply, which belongs to the community.

“This is the right step toward beneficiation activities in communal owned forestry enterprises.

“This model encourages the growth of small businesses such as those that can trade in the transport of timber to the mill, establishment of contractors trading in silviculture operations such as transporting seedlings and the planting of trees. These will be businesses owned by people from these communities,” says Karumbidza.

Karumbidza says that SAPPI has already identified 30 000ha for new afforestation and is already in talks with communities about the development of their land.

Eastern Cape Development Corporation chief executive Buhle Dlulane, Pat Mdungi (Ingqusa Hill Local Municipality Mayor), Nothobile Cwecwe (Mkambathi plantation worker) and Eastern Cape Rural Development Agency chief executive Thozi Gwanya.

“There are some areas which are already licensed and where we are busy planting. These are in Mbizana, Flagstaff, Lusikisiki and Nyandeni. We also have areas in the pipeline that are in the application process for forestry licenses. We are currently sitting at 16 000ha of licensed areas and areas currently engaged in the license application process.

“We have also planted 3 000ha in areas that we are working in the Eastern Cape, which have created more than 600 jobs. This means that by the time we meet our 30 000ha goal by 2033, some 6 000 jobs will have been created through this investment.”
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Premium at all costs

Economic cycles may have their ups and downs, but some original equipment manufacturers stay focused on premium products.

By David Poggiolini

A n original equipment manufacturer (OEM) from the world’s leading forestry region continues to innovate, and Wood Southern Africa & Timber Times was recently invited to witness for itself some of the latest technologies that make Volvo Trucks South Africa a prominent participant in this notoriously arduous hauling environment.

“Over the years, Volvo Trucks has amassed a lot of experience in developing and supporting trucks that operate in extreme off-road and tough on-road conditions,” says Malcolm Gush, sales director at Volvo Trucks South Africa. “Some of the new technologies originated in Sweden’s timber industry where the climate is truly harsh, extreme and varied, while others were also tested in a mine in the peaks of the Peruvian Andes at 5 000 m above sea level.”

Noticeable on the truck range is the OEM’s continued focus on improving safety and productivity, despite the current state of some of the international markets in which these vehicles are being geared.

This includes the mining and construction markets which have seen both the user of capital equipment and members of the supply chain cut on critical research and development (R&D) expenditure to save costs.

Torbjörn Christensson, president of Volvo Group SA, disagrees with this strategy.

He says the group has survived many economic downturns, and that key to this has been its ongoing focus on research R&D that has also kept it ahead of its competitors when economies have eventually recovered.

Tough as yellow metal

As he explains, a rash decision to cut on R&D expenditure can cost a company significant market share in the short term and, in some instances, wreak irreparable damage to existing market share.

“R&D remains a critical area for the group,” says Christensson. “We may decide to cut costs in other less demanding aspects of the operations, but driving innovation in the industry remains high on our agenda. In fact, our customers expect this from the group, including from Volvo Trucks.”

The new launch sees Volvo Trucks draw significant experience from the group’s construction arm, Volvo Construction Equipment (CE). While the range has been targeted at the timber haulage industry, the OEM also wants to seize a significant share of the off-road mining and construction on-site haulage sector.

Volvo CE’s articulated-dump truck (ADT) offering is one of the leaders in the market segment. It can also take credit for being the first company to launch the ADT concept for uneven underfoot terrain.

Now, all Volvo FMX models with all-wheel drive feature Automatic Traction Control as standard. This industry first sees the front-wheel drive on 4×4, 6×6, 8×6 and 10×6 configurations automatically activated providing the necessary traction when needed.
It also provides operators with reduced fuel consumption and better manoeuvrability, while reducing powertrain wear and damage as Automatic Traction Control is engaged only when it is required.

However, participants in the wood haulage industry will appreciate a reinforced version of the I-Shift. This I-Shift is made for severe duty applications similar to those found in forestry haul roads. The company has reinforced the gearbox and adjusted the software so that it is better equipped to handle the frequent gear changes that are common in these environments.

Readers will recall that last month, Volvo Trucks introduced I-Shift with crawler gears. The new gears, which are added to the vehicle’s automated transmission, provide specialised start capability for trucks carrying heavy loads in demanding situations.

As reported in the previous edition of Wood Southern Africa & Timber Times, the system is unique for series-produced extra heavy trucks. Volvo Trucks’ new version of I-Shift makes it possible to add up to two new crawler gears, improving the ability to start-off from standstill and transport a gross combination weight (GCW) of up to 325 tonnes.

In 2015, the company also added the new Tandem Axle Lift function on its FH16, FH, FM and FMX ranges. This new innovation makes it possible to disengage and raise the second driven axle. The function is designed for heavy duty transport applications with loads being carried one way and empty return trips, typically found in traditional forestry applications.

“This functionality offers many advantages including better road grip and up to four percent lower fuel consumption when the truck is driven without a load.”

More heavies

Volvo Trucks has also launched an optional Heavy Duty Bumper for the FH derivative. It is similar to the one on the Volvo FMX, designed to protect the headlights.

In addition, Volvo Trucks is now offering rear air suspension for the Volvo FMX with a driven front axle for 4x4, 6x6, 8x6 and 10x6 configurations. This provides high ground clearance, sound traction and driving comfort, especially when unladen. The company is also now offering Euro 5 five-axle trucks directly from the factory to meet a growing need for higher legal payloads. In fact, combination weights of 50 to 76 tonnes are already allowed on some markets.

“Distributing the load on five axes reduces the risk of overloading the axles. This solution eliminates the need for an external bodybuilder and costly retrofitting. All in all, it gives fleet owners quicker delivery, direct from Volvo and all the benefits of a full Volvo warranty and after-market support,” says Gush.

Volvo Trucks Dynamic Steering, which was first introduced in 2013, is now available for the dual front axles on the 8×2, 8×4 and 10×4 derivatives. This feature is set to drastically reduce the strain on the driver, contributing not only to improved driving comfort, but also to increased safety and productivity. The company has also increased the maximum front axle loads for leaf-suspended trucks with double front axles from 18 to 20 tonnes.

“Customers driving on regular roads may not be able to increase the maximum payload, but they still benefit in terms of load distribution flexibility without overloading the axles.”

For customers in heavy haulage, it’s an opportunity to take on heavier assignments, as well as to take on lighter ones without requiring a costly special permit.

Premium gear

The Volvo Truck range is the pinnacle of truck design and manufacture, and discerning timber haulers will certainly opt for the technologies on offer with all of their benefits. The South African timber haulage sector is known for driving innovation, especially when it is being backed by the two powerhouse pulp and paper producers in the country. Here, immense strides have been made in improving safety and productivity.

However, the diversity offered by the group also adds significant value with brands such as UD providing the hauler with the so-called “sweet spot” offering that strikes a delicate balance between cost and quality. As the hauler grows, Christensson says it may decide to graduate to the Volvo Truck offering with all of its traits that make it a premium European truck marque.

He agrees that there are fleet owners who are opting for cheap, but inferior truck brands in an attempt to reduce costs in unfavourable economic conditions. He warns that, in doing so, they are increasing their total cost of ownership of the asset.

“This is critical. It is impossible to improve total cost of ownership by significantly reducing the upfront purchasing price of the asset. Serious operators know this and would never fall into this trap.”

Wood Southern Africa looks forward to seeing these trucks making light work of hauling precious timber out of the most challenging environments in the forests and onto the main road corridors leading to the mills or the harbours for export!
A privleged eye

A constant trained eye allows for the identification of problems that can be solved in a short space of time, writes Henco Viljoen.

Working as drying system developers and kiln drying consultants, Timbersoft has live access to between 40 to 60 kilns at any given time.

The level of involvement varies from site to site depending on kiln operator experience and operational commitment from the client. This live interactive approach has proven to be very successful, giving the saw mill an instant, “big brother” look into the kilns’ operations. This constant trained eye allows for the identification of problems that can be solved in a short time frame.

Working closely with so many drying operations and kilns, has enabled us to customise and fine tune many operations. We have been given a “privileged eye” into the shortcomings and challenges of the sawmilling industry, specifically in drying.

We believe that one of the biggest hurdles is the “poker player” mentality in the sawmilling community. Almost every mill and saw miller, with who we have interacted, believe that their drying plant is the best in the country. This "keep my cards to myself" approach has led to the stagnation of kiln drying research and limited development of kiln drying methods.

Although kiln controls have come a long way since capillary tubes with the implementation of PLCs and SCADA, the actual application of drying process has not changed much. Yes, the product has not changed much either, but drying approaches perceived to be correct 30 to 50 years ago are still being implemented on new control systems.

Managers need to be aware that colourful kiln displays, many settable variables and historical data will not relieve them of the care and attention that they need to expend on new high tech systems. The “computer” alone is incapable of taking care of the kiln drying process and does not relieve the manager of focusing on other areas in the mill, such as recovery. While better systems should make it easier, the opposite is often the case. The lack of understanding of the newer high tech systems and the lack of knowledge to enable the manager to question and interpret the information displayed on the screen is a recipe for disaster.

Back in the days of “hands on” kiln operators, I believe the results were often better. The operator had a better understanding of the process and what affect or reaction each of his actions had on the drying process.

The net effect of the technology revolution therefore, is that timber is ruined quicker because of more energy efficient and balanced kilns, and often longer drying times become acceptable to achieve the required quality. I recall a case where a sawmiller was unsatisfied with the results coming out a kiln. He replaced it with an imported “state of the art” kiln from Europe. His kiln operator implemented the same drying strategy and the result was not significantly different. In fact, drying time increased from about 90 hours to 108 hours in an attempt to reduce brown stain on 38mm pine.

The technology revolution appears to have given timber dryers and managers a false sense of control, while the operational know-how and trouble-shooting principles and techniques are being forgotten or ignored.

“We believe that one of the biggest hurdles is the “poker player” mentality in the sawmilling community.”
I mention this, because of the basic atrocities we have come across with some of the perceived to be best and most modern kiln control systems. Even though the managers are qualified and the operators have 15 years' experience, these are a few of the problems identified:

- wet bulb wicks so hard they have to be cut free from the wet bulb probes,
- baffles lying on the floor, broken or missing,
- stacks that are too low and not reaching the baffles,
- loose panels inside the kiln obstructing air flow,
- forward or reverse contactor fused in position, so the electrical interlock prevents the fans from running in the opposite direction,
- fan motors of different kilowatts delivering different air speeds and patchy drying,
- different fan types in the same kiln causing patchy drying,
- stream traps not checked and repaired,
- some fans not running at all, or in opposite directions,
- nothing done about the wet bulb running high even when the control system notifies the operator that this is the case,
- vents stuck in the open or closed position,
- probes giving readings that don't make sense and control systems using the incorrect averages,
- drying times set back, because operators at the end of their shift failed to pull the stack, leaving it for the next shift,
- sub-standard stacking practices, and
- stickers not aligning or above base support.

The message is clear. There is a knowledge deficit in the timber drying industry caused by the lack of understanding of technology by operators, and an over reliance on technology by management. A lot of kiln operators have become 'moisture meter' readers and 'stack pullers', with little or no knowledge (or even understanding) of the information with which the control system is presenting them.

Henco Viljoen is system integrator and co-owner of Timber Soft

**Occupation qualification for operators**

Sawmilling South Africa is working with Quality Council for Trades and Occupations to develop, among others, an occupation qualification for kiln operators.

This is a most worthy cause and has the potential to raise the bar for kiln operators and improve kiln drying. Having trained, qualified personnel overseeing the drying process, can be worth millions in quality retention, thereby ensuring maximum return on investment from each log sawn.

Sawmillers, show your cards and take part in this process when the opportunity arises!
R.F. Gevers continues to set the benchmark in the African sawmilling industry. By David Poggiolini

R.F. Gevers occupies a leading position in the field by refining its daily operations to keep ahead of the demand for quality timber.

The sawmill recently underwent a major upgrade bolstering both its wet mill and dry mill capacities and, according to mill manager, Kelvin Bland, there are still more of these in the pipeline.

Bland tells Wood Southern Africa & Timber Times that these are all geared at optimizing operations wherever possible.

“Over the years, we have proved to the market that we are one of the local sawmills against which others should be benchmarked. We have always placed significant credence upon technology and skills training and it is has certainly continued to pay off,” he says.

Both R.F. Gevers’ new wet and dry mill production lines are brand new, and these projects were designed and installed by Nukor and Bland.

He says that the company has nurtured a long-standing business relationship with this vendor and therefore entrusted it with the expansions. The wet mill was the first to be rebuilt from scratch. This extensive upgrade started in 2011 and was completed in 2013.

Over-and-above the installation of a brand new EWD frame saw and EWD Combimes optimising edger from the forestry and sawmilling equipment specialist, the mill incorporates advanced processing technology, such as programmable logical controllers, complementing the inverters in the dry and wetmill, providing maximum control over the entire operation.

In addition, it has provided R.F. Gevers with significant cost savings in terms of energy efficiency - a major focus for the operation that brings it line with most other heavy industries in the country.

Bland says that this was an intricate exercise considering that the entire operation was kept running despite the extensive works under way, including significant bulk earthworks and site terracing from the outset.

“Everything kept operating while we were doing this upgrade. We never stopped production once. We basically built around the old mill. It was a very challenging exercise but we managed to get it done with some perseverance,” he says.

Work then commenced on the dry mill. Here, the main objective was to mechanise and automate as much as possible to improve efficiencies of this aspect of the operation. Noticeable aspects of this component of the plant are the two new REX Timber Master planers, valued at between R2 million to R5 million each, complemented by the installation of conveyors and gantry cranes for efficient handling of timber.

Bland reports that as much as a 30% gain in productivity has been achieved through the extensive mechanisation implemented at the operation. Included in this aspect of the overall brownfields project was the major expansion of timber storage capacity.

Having undergone an extensive mechanisation drive, Bland reports that the mill is looking at implementing various degrees of automation at the plant.

“This is in line with international trends. More automation will ultimately give us better control over productivity and lower total operating costs,” he says.
Strategic link

At present, R.F. Gevers is in the throes of further streamlining its operations. It recently commissioned one new Bollmann kiln and a new Bollmann control system for the existing two Windsor kilns. These, obviously, act as strategic links between the optimised wet mill and the dry mill.

He says that this was essential considering that the existing Starco kilns were 35 years old and were in urgent need of replacement to avoid major bottlenecks in the operation.

One of these was de-commissioned while the new Bollmann and Windsor units were being built and upgraded with a new control system. Bland discloses that the new kiln is a four single track system separated into two. They are able to dry one millimeter per hour, while using minimal energy compared to the earlier units.

Drying times have now been reduced to 40 hours for 41 mm material.

In addition, the company is taking advantage of the ability to handle two stacks of different dimensions of timber in the kilns with their split four compartment. This has streamlined stacking and de-stacking capabilities at the mill.

Meanwhile, a Bes Bollman Tromatic 910 control system provides operators with easy control of the three kilns, while alerting them via cellular phone if there are any problems in the drying cycle.
He says he is extremely impressed with the system.

“IT is as simple as placing the probes in the timber stacks, entering the drying program and pushing start,” says Bland.

At the time of writing, Bes Bollman representatives were still training Bland and the team in the finer aspects of the control system and, when we visited the operation in early May, he was convinced that this aspect of the operation would be running optimally by the end of the month.

Real-time monitoring

He says that the upgrades on the cutting and drying fronts, alone, mean that further expansion at the dry mill are inevitable.

Like all of the other players in the South African sawmilling industry, R.F. Gevers is enjoying a period of sound demand for structural timber in the country, motivating the streamlining initiatives undertaken at the mill, to date.

Meanwhile, R.F. Gevers is the first sawmill in Africa to adopt an advanced integrated platform that will give it real-time information on the overall operation the sawmill.

Importantly, the system will provide the company with accurate measurement capabilities of the entire throughput of the plant, giving it the necessary understanding of its production rates and losses.

This is instrumental in helping the company in its plan to introduce more log classes with different cutting patterns at the operation.
At present, the operation is using the current four log classes, but intends bolstering this to about eight moving forward.

“In the past, we were only measuring the average volume in the stack, which differ from one to the other. This system will enable us to draw an accurate hourly, daily, monthly or yearly report on our recovery rates. We use an advanced spacer system installed by Saw Specialists, in the wet mill so it will be a fairly straight-forward and simple process to implement, once we have accurate information on the throughput of the mill,” he says.

The system was installed by PCS Global, and will provide the mill with real-time information, improving the existing manual process that was needed in the past to garner accurate information on the length, width and thickness of logs and board products being processed by the plant.

In addition to structural timber, R.F. Gevers produces furniture and industrial grade, as well as crating timber, complemented by its clears and semi-clears.

PCS Global has taken over the existing log scanners at the mill and implemented its own systems, comprising scanners, encoders and lasers, at the two trimming tables in the wet mill.

Similar scanners have been deployed in the dry mill, giving a thorough overview of the operation.

Sabin Nair of PCS Global says the system is integrated into a Schneider programmable logical controller and Wonderware software system platform with an information server and historian. This will also be used at a later stage to improve re-active maintenance schedules, as well as assess operator performance.

Critically, it will also help R.F. Gevers optimise the use of water resources in the boiler for the kilns at a later stage.

As Bland points out, this is very important considering the impacts of the drought on industries in the country, especially those in KwaZulu-Natal, which have experienced a dire shortage of water over the past few months.

This will also complement the company’s plans to eventually co-generate, using of its excess high temperature steam of up to 110 degrees Celsius that is needed to ensure a high drying cycle before the timber enters the dry mill.

He says there is a lot of residues generated from the company’s plantations that could be used as fuel source for a bio-mass plant on site. However, these plans are still in very early stages, and therefore Bland is reluctant to disclose more information at this point in time.

More firsts

Wood Southern Africa & Timber Times learns that the company is also one of two operations in the country to have a Vollmer CAG 200 operating in the saw shop.

It was installed six months ago after the company investigated any new options to sharpen their frame saw blades.
Bland says one of the biggest advantages offered by the machine is the accuracy of the computer-numerical controlled system, versus the much older Vollmer cam and rack systems it had operating on the floor for many years.

“This is the heart of our operation, and we therefore decided to spare no costs in ensuring that our blades perform optimally,” he says.

The machine was bought from Nukor, Vollmer’s long-standing South African agent.

While R.F. Gevers has invested significantly in streamlining production and lowering total cost of ownership, Bland notes that the company is quality driven as opposed to being production orientated.

“For us, it’s about the quality of the end product and operating optimally to achieve the required output. We are not about price-cutting and lowering our standards by focusing just on output. This has always been a key differentiator for the company,” he says.

We look forward to revisiting the mill again, and witnessing for ourselves the roll-out of future expansions at an operation that does not shy away from experimenting!
Air circulation given gravitas

The importance of an effective air circulation system inside a kiln should not be underestimated, writes JE Ehlers.

Adequate airflow inside a kiln is critical for effective timber drying. Due to the friction between the rough surfaces of the timber and the flowing air, a boundary layer with a higher vapour pressure is formed on the timber’s surface which reduces evaporation effectiveness. Consequently, the importance of an effective air circulation system inside a kiln should not be underestimated. As standard, all TF Design Kilns are equipped with high-efficiency, fully reversible fan units from Germany that result in high-quality drying while reducing overall power consumption.

The drying process of timber is essentially a combined diffusion and mass transfer process. Moisture needs to be removed from the surface of the timber boards in a controlled manner. The airflow design inside the kiln has a major impact on the final drying quality due to:

- The moisture removal rate from the surface of the timber being strongly influenced by the velocity of the air stream. A low air velocity, therefore, results in longer drying times.
- Diffusion of moisture from the core of the board to its surface is controlled by the temperature of the timber. The hot air that flows across the timber transfer heat into the boards and elevates the temperature of the boards.
- Uneven airflow distribution through the timber stacks in the kiln result in uneven drying and quality degrade.

Determining the air velocity

The target drying rate determines the minimum required air velocity between adjacent layers of timber within the stack. Velocities that are too low will result in uneven moisture distribution through the stack and increased drying times. Velocities that are too high can again negatively affect the quality of the dried timber. Studies and experimental data have shown that slow drying rates are required for typical hardwood species, and air velocities up to 2 m/s can be tolerated. Softwood timbers, such as Pine, with associated faster-drying rates, require an airflow between three and six metres per second.

During evaluation of the airflow, it is important to calculate the cross-sectional air flow area of the voids between the layers in the timber stacks. This cross-sectional area is then multiplied by the required air velocity resulting in the target volumetric air flow rate. A 10% leakage factor is added to account for losses due to the less than perfect stacking of the timber. The leakage factor can be adjusted according to the prevailing stacking practices of each sawmill.

A uniform air velocity distribution through the stack openings is essential for ensuring an even final moisture content distribution throughout the timber stack after completion of the drying process.

The following design parameters play an important role in the air velocity distribution:

- symmetry of kiln’s design,
- selection of the correct fan units,
- width of plenum chambers,
- baffling around the timber stack, and
- quality of stacking and equal sized stickers.

All the parameters above are interconnected and influence one another. Finding an optimum solution entails the simultaneous solving of a matrix of equations. During development, TF Design used computational fluid dynamics (CFD) to solve the complicated flow calculations in order to optimize air flow distribution and velocities.

The traditional locally manufactured impeller blades are designed to operate only in a single air flow direction for a specific rotational direction of the impeller. Reversible flow is achieved by turning every second blade through 180°. The result is that only half of the blades perform according to their design conditions while the other half are in reverse mode and highly inefficient.

Fully reversible fan impellers, such as the imported DLK range of fully reversible impellers, are designed to solve this specific problem. The fan blade uses a typical NACA symmetric profile that has been developed to ensure the same maximum efficiency in both the forward and reverse directions. The

Quality, high efficiency fans ensure that the kilns produce high quality dried timber.
implication is that the electrical power consumption for these fans is considerably less than the single direction impellers with every second blade facing in the opposite direction.

The fan cowling is manufactured from aluminium with a rounded fan inlet. This reduces inlet losses and increases the efficiency of the fan unit. The fan impellers are accurately balanced ensuring a small blade tip clearance. The overall improvement in fan performance, compared to traditionally mounted units, can be as high as 25%.

TF Design kilns incorporate direct mount fan motors inside the units as opposed to mounting the motors outside and connecting to the fan using a connecting shaft.

This provides the following benefits:

- Reduced vibrations. Fans and motors can be balanced perfectly and installed as a unit.
- Improved shaft alignment, considering the increased bearing reliability.
- Improved efficiency with little or no losses through the connecting shaft.

High humidity levels and temperatures prevailing inside a kiln create a corrosive and hostile environment for any electrical motor. Consequently, reliability is a major concern considering this highly corrosive operating environment. TF Design kilns are equipped with high-quality, fully sealed, Siemens electrical motors that are rated for 120°C and 95% relative humidity.

Main factors influencing fan motor reliability include:

- Effective temperature dissipation. Dissipation of heat is of utmost importance and these fans rely on the large fins on the outside of the motors to regulate temperatures.
- Bearing reliability. Correct shaft alignment, vibration minimisation, and adequate lubrication improves the reliability of the bearing units. Shaft alignment and vibration minimisation is addressed by installing the fan motor as close to the fan as possible. Adequate lubrication is addressed by having re-greasing devices on all fan motors and ensuring that only height quality Esso Unirex N3 or Klüber Barrierta L55/1 grease is used.

The selection of quality, high-efficiency fan units ensures that TF Design kilns produce high quality dried timber at an even moisture content distribution, without the high electrical power demands normally associated with modern kilns.

TF Design remains committed to continuously develop South African drying technology to provide tailored, cost-effective solutions to its clients.

JE Ehlers is from TF Design Kiln Air Flow Solutions
The Free State has become a hub of innovation in timber use, as a state-owned initiative explores better ways of using South Africa’s vast invasive biomass resources.

This state-owned initiative is clearing invasive Poplar and other species within a 80km radius of its sawmill in Ficksburg where it was built to produce boards for school desk production, as well as a host of other value-added products. It feeds a number of other operations also appointed by government to manufacture school desks.

About 270 000 school desks are being made for public schools in the country.

The initiative is geared at creating job opportunities for poor communities and equipping them with the skills they need to secure meaningful employment. It is linked to the Department of Water Affairs’ Working for Water initiative with

New kilns have been installed at the operation

A bush miller is turning the Free State into a hub of timber product innovation, writes David Poggiolini.
similar objectives, but based on the urgent need to rid water-stressed South Africa of unwanted invasive tree species.

However, the reality is that although strikingly beautiful school desks can be produced from the timber, considering its similarity to pine, it is not grown for these purposes and wastage is therefore extremely high. This encouraged the use of other waste streams. At present, it is using as much as 90% of its waste. Wood Southern Africa & Timber Times visited the operation last month, when two extruder lines were being operated as part of a six month prototype that will investigate producing cattle feed from Poplar. This has never been attempted in the country before, but is looking extremely promising.

Also on the agenda is the production of fibre-wood cement materials that will compete in the alternative building systems market.
Here, there is collaboration with a large producer of these products in the United States, as well as the University of Stellenbosch which has been tasked with finding the most suitable timber species that will bind with the cement.

The first stage of the project will see the installation of equipment needed for the dosing and mixing of materials and the moulds, before embarking on the next phase which will comprise the installation of a large computer-numerical control (CNC) machining line that will be used to cut the various components.

There is a ready market for about 4 000 units a year in the early commercialisation stages of the project. Product will be supplied to both public and private sector builds.

Playing strongly in favour of this business plan is the heightened interest in sustainable building practices in the country, challenging the conventional brick and mortar method of building in the country.

These machines complement other related initiatives, including the production of hydro mulch, a by-product of the company’s farmers’ mulch that is produced from the chipping of its waste stream. The company has developed a close affiliation with this market over the years, considering that it also supplies farmers with shavings for the poultry market.

However, the biggest initiative already under way at present is the diversification into the production of wood wool products. Already, it is a significant supplier to the Department of Water Affairs, which is using them for erosion control, including for the preparation of a large and highly-anticipated water augmentation project in the Eastern Cape.

Complementing this range of products are the wooden pegs used to be down the erosion control blankets.

**Constant upgrades**

The mill itself has undergone and continues to undergo extensive expansions, which will also help attend to the challenges associated with making furniture from invasive species.

Traditional bush-milling practices are simply unsuited to meeting the initial objectives of the programme. As such, it is installing a frame-saw line which it acquired on auction from a saw mill in the area. This will improve recoveries and help overcome some of the bottlenecks encountered in the past.

Over-and-above the inconsistent quality, as well as shape and size of the timber are the challenges of ensuring a regular supply of biomass. The mill has already harvested and cleared most of the so-called “low-hanging fruits” available in the...
region, and it is now starting to encounter delays in securing the rights to enter farmlands. This is despite the fact that it is legislated that invasive species need to be removed from properties and that government pays for the eradication of the Poplar and Cedar found on these lands.

About 40 people are employed in the harvesting activities and 60 in the cleaning processes under the EPWP.

It is believed that there is potential to harvest more invasive biomass resources, especially for the alternative products being manufactured by the company.

Included in the recent streamlining of the mill’s capacity was the installation of two Mahild kilns. This supplements the capacities of the existing dehumidifier units that were installed at the operation from the outset and better geared at handling the smaller volumes of Eucalyptus species delivered at the operation with their slower drying cycles.

The new Mahild kilns, on the other hand, have significantly improved drying cycles. He says they were essential to unblocking the smooth flow of production from the wet mill to the dry mill, and is geared at handling the significant quantities that will be processed once the new sawmilling line is up and running. It is believed that more of these units would have to be installed at the various satellite factories to cater with the increase in production envisaged at the mill.

The purchase of two kilns was financed by government, and reflects its long-term commitment to the operation.

The control system of the units has simplified its operation – a major advantage for a labour-intensive operation.

The 65 degree Celsius temperature needed to heat the timber is achieved using a new Bosman kettle that was installed at the same time as the kiln.

The mill is excited about the future, considering the country’s vast biomass resources which, he says, are waiting to be exploited to the benefit of the country’s economy!
SAWPA News

Amended SANS 1288:2016
The amended SANS 1288:2016 Ed 3.5 was approved on 8 April and is now available from the SABS Standards sales department (sales@sabs.co.za or 012 428 7911), and effective from the date of publication. The latest amendment incorporates the treatment of sawn eucalyptus timber with class W preservatives for H2 purposes using a treatment to refusal process. The amendment also encompasses the envelope treatment of impermeable sawn softwoods (Spruce) with LCSP preservatives to H2.

National building regulations
SAWPA recently attended a stakeholder meeting on the review of the National Building Regulations and Building Standards Act where the Department of Trade & Industry unveiled the plans for revision and establishment of a task team to oversee the rewriting process. It is envisaged that the process may take up to five years, and it is important that SAWPA remains abreast of and part take in the process to ensure that the current preservative treatment requirements remain as well as to influence any deficiencies that need to be considered. An example is the new energy efficiency rules that prescribe the use of cavity walls, which has the potential to cause access and infestation to building timbers by subterranean termites in the inland areas.

Private and public sector meet
A Bosberaad arranged by Deptment of Agriculture was held on the 22 and 23 April that included representatives from industry, including Forestry South Africa, Sawmilling South Africa, PAMSA, SAPWA together with all the pertinent government departments, such as Water & Sanitation, Trade & Industry, Rural Development & Land Reform, Public Enterprises and Environmental Affairs. The Bosberaad was called by the deputy minister of DAFF to deal with priority key issues that will ensure growth in the industry, rural development, job creation, new afforestation, recommissioning of reversed exit areas and state plantations, water licensing as well as transformation in the sector, land reform, the new Alien and Invasive Species Regulations and the draft Genus Exchange regulations.

Although the majority of issues relate mainly to the growers, the outcomes will directly affect the processing sectors of which we form a part of. As such our support and assistance in the enormous efforts and inputs made by FSA is required. We are pleased to announce that the new Chairman for the South/Eastern Cape region is Pierre La Grange from PG Bison – Woodline, and for the Western Cape, Malcom Wetmore from Somerset Timbers. On behalf of SAWPA members we thank you for your willingness to take up the positions and welcome you as regional chairmen and representatives to the SAWPA executive committee.

Our sincerest thanks to the previous chairman, Henk Zonnestein and Francois Swanepoel, for their dedication and commitment, and we wish them all success on their new endeavours.

Review of SANS standards
A proposal to revise SANS 10005, SANS 1288, SANS 457-2&3 as well as SANS 753 and SANS 754 was tabled at a recent SABS TC 218 meeting held on 19 April, and found suitable with all the members of the TC in attendance. The proposed changes, which was also a point of discussion at the SAWPA regional meetings held in February and March, intends to revise the aforementioned specifications in such a way as to simplify them by removing all the unnecessary duplications contained therein, to ensure any contradictory content is clarified or removed, to allow for clear interpretation by the users and regulators.

In principle the changes will incorporate the removal of all preservative treatment performance requirements from SANS 10005, which will in future address only provisions related to the preservatives and processes approved for industrial and primary preservative treatment, the clarification of the hazard classes, etc. All the performance requirements, i.e. penetration and retention, covering all commodities will be contained in SANS 1288, which will mean the pole standards will only contain the physical and material requirements up to and prior to preservative treatment, with reference to compliance to SANS 1288 in respect to the specific treatment requirements. A working group was appointed at the TC 218 meeting which will be convened by Bruce Breedt, who has also been given the task of drafting the initial working drafts.

New chairpersons
Following the resignation of the regional chairmen in both the Southern/Eastern Cape and Western Cape regions to follow new career paths, SAWPA embarked on a process whereby written nominations followed by a ballot was implemented. We are pleased to announce that the new Chairman for the South/Eastern Cape region is Pierre La Grange from PG Bison – Woodline, and for the Western Cape, Malcom Wetmore from Somerset Timbers. On behalf of SAWPA members we thank you for your willingness to take up the positions and welcome you as regional chairmen and representatives to the SAWPA executive committee.

SABS TC 218 on timber preservation
A proposal was tabled at the recent TC 218 meeting which will see the implementation of three subcommittees under the main Technical Committee. The sub-committees will each deal with standards that pertain to a) preservative treatment and process requirements, b) chemical standards and related methods, and c) physical and material requirements of timber products where treatment is specified. This restructuring, if successfully implemented will fall in line with the proposed review of the timber treatment standards explained earlier.

The function of the TC will be that of an overseeing committee, responsible for allocating any new and future standards to the most suitable subcommittee, as well as ensuring that each subcommittee fulfils its mandate with regards maintenance and development of the standards allocated to them.
CHOOSE THE CORRECT PRESERVATIVE TREATED TIMBER
FOR YOUR END APPLICATION (H classes)

H2 – Low Hazard: Inside above ground
H3 – Moderate Hazard: Outside above ground
H4 – High Hazard: Outside in ground
H5 – High Hazard: Outside in contact with heavy wet soil or in fresh water
H6 – High Hazard: Prolonged immersion in sea water

FOR MORE INFORMATION ON ANY ASPECT RELATED TO TREATED TIMBER PRODUCTS AND THE CORRECT USE OF TREATED TIMBER, OR WHERE TO CONTACT SAWPA MEMBERS, PLEASE CONTACT:

Tel: 011 974 1061
sawpa@global.co.za
www.sawpa.co.za

South African Wood Preservers Association
Eco friendly solution for landscapers

Landscapers now find themselves faced with the dilemma of how to embrace the ‘green’ eco-sensitive option while at the same time maintaining the natural aesthetics of wood.

Nothing matches wood in versatility or appeal. Its warmth and natural beauty works wonders for creating a sense of balance and calm, which makes it the natural choice for landscapers and avid gardeners. However, in order to maintain its appeal the challenges of premature degradation due to wood rot and insects must be overcome with a wood preservation treatment.

While these treatment methods are effective, many are under scrutiny for not conforming to international trends of reducing the carbon footprint. As a result, landscapers now find themselves faced with the dilemma of how to embrace the ‘green’ eco-sensitive option while at the same time maintaining the natural aesthetics of wood.

Leeroy Deane, co-owner of the Riversdale Tanalised E Treatment Plant in the Western Cape, says there is a solution at hand.

“With eco-trends on the up, this is a real concern for landscapers and a foremost consideration that is shared by gardeners who grow edible product in wooden planter boxes. The primary benefit of growing your own food is the knowledge that it is organic, which is a view shared by landscapers who want to create eco-sensitive ‘green’ gardens. It is for this reason that we have introduced products treated with the new generation Tanalith E wood preservative as it embraces this same eco-sensitive ethos,” explains Leeroy.

Tanalised® E wood products have been awarded the Ecospecifier Global certification, which means that the product has undergone rigorous assessments that have verified it as a global environmentally preferable product.

Leeroy, who is also the co-owner of The Pole Yard - a leading manufacturer of landscaping products, says that environmentally discerning landscapers are becoming increasingly concerned about choosing wood treated products that tick all the ‘green’ boxes, while at the same time deliver quality assurance and longevity of the product.

Tanalised E wood is pressure treated up to the H4 hazard classification, which means it is protected for use in permanent ground contact applications. This classification covers products such as landscaping sleepers, non-structural retaining walls, garden edges, fence posts and planter boxes.

While the United States, Europe and Australia have placed restrictions on certain traditional wood treatments, Tanalised E wood preservative has proven to be the preferred global solution by conforming to international directives related to environmental responsibility. Locally this means that landscapers can embrace the Tanalised E wood preservative as the choice product of the future when it comes to maintaining the beauty of wood without compromising the ethics of ‘green’ garden design.
In the wake of what has been one of the most challenging economic periods for the building and construction sector, small- to medium-sized building contractors are carving out niche opportunities that were previously more accessible to larger competitors.

With competitive pricing and entrepreneurial drive, smaller building and construction companies are making a significant impact on market growth.

Interbuild Africa is one of the largest building and construction trade exhibitions in Africa, and a show that is specifically targeted at the small- to medium-sized building contractor.

Taking place at the Johannesburg Expo Centre, Nasrec from 17-20 August 2016, Interbuild Africa brings almost 7000 industry buyers under one roof for four days to source products and services from more than 300 exhibiting companies.

“The vast majority of visitors to the show, include company managing directors and business owners, as well as those individuals responsible for procurement, some with purchasing power of up to R10-million,” says Gary Corin, managing director of Specialised Exhibitions Montgomery.

“Over the years we have also noted a change in the profile of our typical visitors with a steady increase in the number of architects, civil engineers and independent contractors attending the event,” he says.

In addition to showcasing the widest range of building and construction materials, equipment, technology and services, Interbuild Africa 2016 will host a free-to-attend seminar theatre, where visitors can learn all about the latest trends impacting on the sector.

Interbuild Africa has also partnered with leading industry bodies to host a number of high profile conferences and workshops.

These supporting partners include: The Association of Architectural Aluminium Manufacturers of South Africa, Association of South African Quantity Surveyors, and the South African Institute of Architects.

Interbuild is also endorsed by other professional bodies, such as: Master Builders South Africa, National Home Builders Registration Council, Institute of Plumbing South Africa, and the Southern African Light Steel Frame Building Association.

Interbuild Africa is co-located with four other industry leading events: Glass Expo Africa, Plumdrain Africa, EcoAfribuild and Hardex Africa. This year’s event will see the launch of Sanifer, a natural extension of Plumdrain Africa, showcasing the crucial role of water resource management, water quality, waste water management, access, infrastructure, sanitation and developing technologies.

Interbuild Africa will also host new features, including a dedicated A-OSHExpo Pavilion, showcasing the widest range of occupational health and safety products, equipment and services.

Another show making its debut at Interbuild Africa is Wood World South Africa, a dedicated show for the burgeoning Wood Working and Timber Processing industries.

Set to make its official launch on 2018, Wood World South Africa will be unveiled at a dedicated Pavilion by Interbuild Africa organiser, Specialised Exhibitions Montgomery in a Joint Venture with Hannover Fairs International (Deutsche Messe).

“Another positive trend at Interbuild in recent years is the ever increasing number of international visitors to the show, demonstrating higher numbers in 2014, than at the 2010 and 2012 shows. Interbuild Africa 2014 welcomed more than 300 international visitors from across 46 countries,” says Corin. “This year we’ve focused on increasing this number and we’ve placed great emphasis on attracting more international interest, particularly from other African countries,” he added.
The Institute for Timber Construction (ITC-SA), South Africa’s professional body and regulator of the engineered timber structure industry, is set to attend the fourth WoodEX for Africa, taking place at Gallagher Convention Centre in Midrand from 9-11 June 2016.

WoodEX for Africa, which started out in 2012, has become a premier platform for woodworking professionals in South Africa to connect with the trade, learn more about new products and services on the market and network with players in the sector.

Comments Dr. Pierre de Villiers, director on the board of the Institute for Timber Construction South Africa (ITC-SA), “The ITC-SA has exhibited at WoodEX for Africa since the show’s inception and has enjoyed great exposure to both fellow exhibitors and visitors alike. WoodEX for Africa represents a fantastic opportunity for us to share information and advice about timber construction, create awareness of the benefits of using timber in this way, and put interested parties in touch with ITC-SA registered members for their roofing, decking and timber construction projects.”
Verified for Green Building Rating

Treatment with TANALITH® E wood preservative has been third party verified as likely to contribute to the achievement of Green Building rating tool credits by Ecospecifier Global. TANALISED® E pressure treated wood can now be specified in Green Star Rated building projects.
Stephan Jooste, CEO of WoodEX for Africa comments, “The ITC-SA came on board with us at the very start and they’ve come a long way with us. Being the regulator of the timber construction sector in South Africa, the Institute plays a pivotal role in our industry, not only in regulating the trade, but in educating, informing and connecting various players in the market. We are proud to be hosting the ITC-SA at WoodEX for Africa 2016 and wish them another very successful show.”

About the Institute for Timber Construction (ITC-SA):

The ITC-SA was established more than 40 years ago to regulate the engineered timber roof structure industry and to provide design, manufacturing, erection, inspection and certification for compliance with inter alia SANS 10400 and SANS 10082, where engineering rational designs are applicable.

The ITC-SA is a South African Qualifications Authority (SAQA) accredited professional body with a professional membership and therefore has to comply with the requirements as set out in the National Qualifications Framework Act (NQF Act 67 of 2008 – as amended). The ITC-SA is also a Recognised Voluntary Association in terms of the Engineering Profession Act, 2000 (Act 46 of 2000).

In 2014, the Institute for Timber Frame Builders (ITFB) was incorporated into the ITC-SA to ensure a better and more uniform representation of the timber engineered practitioners in the built environment.
Sawmiller cuts its share

A sawmill in South Africa’s Mpumalanga province harnesses the strengths of a remote band sawmill to continue its drive for improved mill efficiencies.

South Africa’s Mpumalanga province near neighbouring Mozambique is known for its vast timber resources. South Africa has about 1.3 million hectares (ha) of commercial timber plantations. Roughly 520,146 ha or 41% of those plantations are found in Mpumalanga.

As an important timber supply area, competition is rife between foresters and sawmillers to grow timber better and produce sawn timber more efficiently.

This is very often the factor that decides which grower or sawmiller remains standing for the next day’s trading.

Capio Lumber’s entry into the marketplace in late 2012 was set against this tough and competitive backdrop.

Despite knowing that it was entering a keenly contested playing field, Capio Lumber had a few cards up its sleeve that it knew it could use to make the operation competitive going into the future.

The first factor that smoothed its entry into the market was knowing into which markets it could sell its products. An association with a hardware store that it had ties with provided a ready market for most of the structural timber that it produced.

Furniture and pallet manufacturers who liked Capio Lumber’s quality and pricing gave further momentum to its start-off.

The experience of the Capio Lumber business partner team also gave the outfit a running start.

In addition to being family-in-law, Ross Scorgie and Bruce Moxham both come with formidable track records in the timber production arena.

Ross Scorgie had grown the hardware enterprise with which Capio Lumber had ties with to a point where it could now sustain a sawmill. Better pricing and more product variety resulting from opening of the sawmill added momentum to the hardware sales, which also benefitted the sawmill.

Bruce Moxham’s exploits in the timber industry is legendary, having overseen a family owned timber enterprise of considerable size that was eventually sold to a listed company on the Johannesburg Stock Exchange.
Remote sawmill boosts efficiency

The shared experience of Capio Lumber’s management team also made it easy to decide which equipment it needed to start and effectively compete in a tight market space.

Productivity was high on the priority list.

Capio Lumber needed reliable equipment that was easy to afford and could give it the output it needed to pay for the machines and grow the business. The affordability requirement also meant opting for equipment that was modular and could slot into the existing mill infrastructure as and when finances became available.

Choosing equipment that was easy to maintain and that could reduce the amount of manual labour needed to produce the output Capio Lumber expected was also a priority.

Equipment with low energy costs and high recovery numbers which meant that less timber was wasted and more timber was available to sell, were also important factors to consider.

Cutting quality.

The Capio Lumber management team needed equipment that could consistently produce precisely sized sawn material with the best surface quality that required less secondary processing and that the market was prepared to pay a premium for. Wood-Mizer’s equipment range provided for all these requirements.

Wood-Mizer First choice

Capio Lumber’s first investment from Wood-Mizer included an LT20B electric sawmill and SHR-F Resaw.

Although the LT20 can cut logs into ready to sell timber, Capio Lumber easily doubled its output by investing in the resaw.

Costing less than having to buy a second sawmill, the resaw allowed the LT20B to only cut blocks with the resaw cutting the blocks into sawn boards and recovering waste that exited the sawmill.

This consistent search for increasing output in the most cost-effective way has remained a recurring theme in Capio Lumber’s growth to date.

The mill’s equipment checklist included until recently two Wood-Mizer LT20’s (Electric and Diesel), an LT70 Electric with hydraulic log handling capacity, an HR500 two-head resaw line, two SHR-F resaws and an EG300 board edger.

These were complemented by the commisioning of a Wood-Mizer LT70 Remote at Capio Lumber.

Powered by LT70 Remote

Capio Lumber’s focus on efficiencies that includes productivity, affordability, low labour and energy costs and maximum recovery convinced the company that the LT70 Remote is the right machine to grow the business further.

The LT70 Remote together with LT70 Electric and the two LT20’s now serve as Capio Lumber’s primary breakdown mills. The LT70 Remote was developed as a semi industrial sawmilling solution for sawmillers that have outgrown the capacity of the non-remote LT70 sawmill range but do not want to commit to the required capital investment to buy a fully industrial sawmill like Wood-Mizer’s WM3500.

The LT70-Remote sawmill was actually unveiled in 2001. It resulted from Wood-Mizer’s successful strategy to extend its narrow blade technology to its industrial range with the WM3500 and WM4000 key examples of the models in this range.

In terms of overall operation the LT70-Remote sawmill duplicates the operation of the WM3500 sawmill yet it costs 40% less. On the productivity front the LT70 Remote is only 30% less
productive than the WM3500. As business improves it is easy to add another LT70-Remote sawmill (or even an LT300 sawmill) and expand by the addition of equipment as opposed to buying one large scale piece of equipment.

The main 18,5 kW motor permits cutting large diameter logs – and this power requirement is low compared with the power requirements of rival mills.

The LT70-Remote band sawmill productivity increase is mostly due to its integrated design that allows for a log to be processed into finished boards more profitably with minimal expense and labour.

The Remote configuration pushes the production capacity of the LT70 to the absolute maximum with a Remote Operator Stand and adds a full range of conveyors and tables for moving logs to the sawmill and boards further down the line. All sawmill controls are centrally located and the operator has every control within easy reach at all times.

Each component’s function in the line is also synchronised to avoid ‘bottlenecks’.

The line can be configured to match the needs of individual businesses, and typically includes:

- log deck for staging and loading logs,
- incline conveyo for transporting slabs and boards,
- transfer table quickly directs waste, finished boards, and slabs for edging in three different directions,
- edger multirip for edging boards, and
- roller tables where needed.

The LT70-Remote sawmill is also simple to maintain and operate. The electric and electronic designs are the same as on the LT70 Series and the new mill can be slotted into an existing line at minimal cost and disruption to the rest of the line.

The LT70 Remote sawmilling systems deliver maximum production using Wood-Mizer’s orange line of sawmills. The productivity, higher log yields, affordability and low operating costs make these systems viable solutions.

Final take

Capio Lumber’s focus on efficiency has allowed the mill to grow despite challenging market conditions.

Upgrading its mill for increased output while remaining price competitive and generating the profits it needed to run the mill while also expanding has meant that it had to be exceptionally vigilant about efficiencies.

A large part of their success can be attributed to their equipment selection strategy that has given them the ability to run a streamlined operation that is geared for long term growth.
Portable Sawmills

Dynamite comes in small packages

The Junior Peterson was designed based on Peterson’s semi-commercial flagship model, the Winch Production Frame.

The Junior Peterson may have a smaller cutting capacity than the rest of the Peterson Portable Sawmill range, but features all of the components of other models.

The Junior Peterson was designed based on Peterson’s semi-commercial flagship model, the Winch Production Frame. Both sawmills have one winch at the operator’s end which is used to raise and lower the parallel tracks that house the centre unit.

Other swingblade mills have dual winches at each end of their mills which require the operator to walk to the far end to make vertical adjustments.

To Peterson’s designers this was time better spent milling, and is just one feature that makes the range more efficient than other swingblade mills on the market. In the early days at the research and development stage of design, the Peterson team discovered that mounting their sawmill engines higher than other manufacturers meant that sawdust wouldn’t need to be cleared as often, also saving time.

Accurate horizontal sizing is simplified on Peterson mills to aid in efficiency with simple, proven sizing devices right at the operator’s fingertips.

The JP has a maximum cut of six inches in one pass allowing six inch by six inch beams.

But by ‘double-cutting’, the mill has the ability to produce up to twelve inch by four inch beams.

Where competitor mills require awkward rearranging of mill components to cut a large beam, most models in the Peterson range require only a minor alteration; removing two bolts to detach the sawmill deflector.

However, due to the design of the Junior Peterson, simply raising the guard will make that happen with no hassle at all.

Another feature of the Peterson range is the blade design. Peterson have a sound combination of a thinner kerf along with a solid plate that won’t heat up, wobble or...
Peterson blades have been known to last over a decade and can be sharpened on the mill in around five minutes.

Peterson's blade design alone has been a purchasing clincher for those who have operated band saws previously, due to the low running costs and simple sharpening.

All Peterson mills including the JP come with two blades and an electric diamond wheel sharpener with a jig that is pre-set to your blade size. Being that the entire Peterson range are operated with electric start engines, the sharpener can be connected to the engine when needed.

Recently, a competitor mill has come under fire for having 'sag' in their beam when cutting thus affecting the accuracy of the finished board. This simply does not happen with the Peterson frame.

Although the JP sits at a lower price point than the rest of the Peterson range, it still features industrial gauge frame extrusions with deeper, thicker wall sections and copyright track die designs. The result is no sag, bounce or wavy timber and all of your horse power is going into the cut rather than being lost in wasted movement.

Quality board product can be produced using the machine.
During a recent demonstration, sawmill specialist Chris Browne cut two by six inch and four by four boards from seasoned Jarrah which really put the Junior Peterson to the test as Jarrah is some of the hardest wood in Australasia. Yet even when tackling this super hard wood, the JP cut true and the boards came off straight every time.

“The Junior Peterson is able to produce up to four cubic metres of dimensional lumber per day. That means that with seven days of full time milling, you could cut enough lumber for a small two bedroom home or garage during your trial period, saving you around $15,000 on purchasing rough sawn timber.”

While the JP retains all of these signature features some of the component’s materials have been simplified to lower the price-point making the mill more affordable for part-time millers.

The company has received very positive feedback from Junior Peterson owners worldwide, like Patrick Audet from Maine, USA who is a previous Peterson Winch

Production Frame owner:

“This model is the new Peterson Junior, but the word Junior is inappropriate. If you are milling high value lumber, this is the best mill in the world. It far exceeded my expectations as a former owner of a WPF and would be my preference regardless of where I was or what I was doing.”

Ted Isaacs who is based in Oregon, USA was the first Junior Peterson owner in the world and uses the JP for various products on his farm:

“When I saw the Junior Peterson, it was perfect for my needs. I liked the price point and the fact that it was a one-man operation. I am tickled with my mill, especially for the price. It does everything I need!”

Alan Coyle conducted a field test of the Junior Peterson at his milling site in Taupo New Zealand and was pleasantly surprised at the effectiveness of the ‘part-time sawmill’:

“There was an abundance of horsepower and the blade ran true through un-pruned farm logs full of defects. Superb effort from a machine that is truly portable – not just mobile – but able to be set up anywhere that a human can walk.”

The machine has received a favourable ... from users
Fit for purpose

No single adhesive offers a panacea, though some technologies are more versatile than others.

Choosing the right adhesive for the job might seem obvious but many of the problems with edgings delaminating, or panels and doors deforming at the edges, are the result of the wrong choice of adhesive during manufacturing. The point is made very clearly with the two examples on this page: exposed to water, the EVA adhesive used to apply the edge to the white panel didn’t seal the edge and allowed water ingress, which swelled the chipboard; bonded with PUR, exposure to water made no impression on the edges of the panels in the other picture.

No single adhesive offers a panacea; though some technologies are more versatile than others. It’s up to you to know the end use of the product and make the right choice.

“There are two main reasons that govern choice of adhesive,” explains Kleiberit’s Bradly Larkan. “Performance and aesthetics - and it’s the end use that should drive the decision. Normally, producers who are making doors and panels for kitchens and bathrooms require a high performance finished product that will withstand high temperatures and high humidity. The choices available from an adhesive perspective are Ethylene Vinyl Acetate EVA technology, Polyolefin PO technology, or Polyurethane PU technology. EVA performance levels are ideally suited to household furniture items but their performance-limiting factor is that they are thermoplastic. They will perform differently under hot conditions, for example near an oven, or a radiator, depending on the softening point of the particular adhesive you choose.

“PO technologies have a very high heat resistance, which you might think would be ideal for kitchens, but their weakness is the bond performance in high humidity conditions. PO technology, even though inherently hydrophobic when used in edgebanding, shows limitations in damp conditions or high humidity and hot conditions - for example where kettles are likely to be used. Therefore, (PO) technology would not be the best choice for use in bathroom furniture from the standpoint of humidity resistance of the bond. The better solution would be PU adhesives because, once cross-linked, PU gives the highest performance, penetrating the substrate and chemically bonding the edge to the panel, thereby providing the finished piece with very good water resistance.
“From an aesthetics point of view, the target is always zero glue line. All three technologies have their pros and cons. It is possible to achieve a very thin glue line with an unfilled EVA, or an unfilled PO. However, even though these unfilled options give a high performance rating in this aspect, they are still thermoplastic in design and will still perform poorly in dampness or heat.

Reactive PO adhesive on the other hand, applied with the same coat weight, consistently has a higher performance. Furthermore, due to its polarity and ability to chemically react with the hydroxyl groups (which are typically found in wood-based substrates), it is possible to reduce the coat weight without sacrificing performance. Summarising this, PU adhesives are the right choice on your path to the invisible glue line.

“All the technologies are available in various grades that vary in viscosity from low to high, and from low, or non-filled products to highly-filled products.

Depending on the end requirement, if you want the thinnest glue line, you need the lowest viscosity and that comes from an un-filled product. If the driver is cost, then a filled product might
Bright Solutions for
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- Highest gloss levels
- Tremendous scratch resistance
- Environmentally friendly technology

Edge Banding - Zero Glue Line
- Extreme strength
- No chip swell
- Outstanding water resistance

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be the better choice. The flip side with a filled product is you have to apply more to get the performance and that results in a thicker glueline. You need to decide what's right for you."

The choice is vast but Kleiberit’s specialist engineers and sales people can help you make the right decision. “We have field-based sales engineers, who are highly qualified and can support on-site productivity improvement, helping to improve your processing and, if necessary, helping you to get more out of the machines you have. If need be, they will look at every aspect of your production and it’s surprising how things you probably wouldn’t think of - things like repositioning an edgebander away from a door so the adhesive doesn’t cool every time it opens - can have a significant effect on the way the adhesive and, ultimately, the finished product will perform.”

Kleiberit supplies EVA, PO and PU technologies in different colours to match the most popular edgings in the marketplace. Pack sizes are available to suit every possible manufacturer from small, 300 g cartridges all the way up to 200 kg drums with delivery in the week of order on ex-stock items.

To find out more, or to discuss a particular adhesive related problem, call the Southern African agent: 010 500 9165 or visit www.kleiberit.com
You wouldn’t expect something so beautiful to be so tough.

MelaWood SupaGloss™ is the latest design and colour trend brought to you by PG Bison, the trusted name in decorative panels for kitchens, furniture and shop fittings.
That mark of innovation

While Austro gears up for its latest in-house show, David Poggiolini was afforded an opportunity to learn about two novel offerings that will enhance its service offering.

I

It is considered by many players in the southern African woodworking fraternity as an institution and, for this very reason, Austro’s bi-annual woodworking machinery show is known for attracting the crowds.

The event’s strength is, undoubtedly, its intense focus on technology that improves productivity while reducing operating costs. This has become even more relevant in these very challenging economic times.

At every show, the Austro team has ensured that it has something new to introduce to the market. And, this year’s event promises to do exactly that.

While one can expect to see the latest state-of-the-art technology from leading international original equipment manufacturers (OEM’s), there are new launches that will, again, assert the critical role that the agent plays as an important link between international research and development and the exacting needs of its sales territories.

Having access to international premium brands is only one part of the puzzle. However, it is the ability to support these brands in the field that ensures their growth in any market segment. This has always been Austro’s strength, and the reason why the company will dedicate time at the event to introducing the market to new offerings that will strengthen

Data for all brands of CNC machines can now be stored safely and cost-effectively in the cloud.

Austro

CONNECT

Data for all brands of CNC machines can now be stored safely and cost-effectively in the cloud.
its after-sales support. Wood Southern Africa & Timber Times was invited to witness some of these imminent launches.

**Information data reports**

This includes the Austro Connect, a service that will see Austro back up its computer-numerical controlled (CNC) centre’s data in the cloud. Cloud storage is a service model in which data is maintained, managed and backed up remotely and made available to customers over a network.

As Austro’s Leon Fourie points out, all advanced CNC machines are at risk of losing valuable data.

These machines, which contain precious intellectual property needed to keep the factory floor operating, work in arduous environments. They are exposed to hazards such as dust and busy production lines.

Extenuating circumstances that also pose severe risks to these critical components of production lines include operator neglect and even outright theft.

It is not unusual for busy professional woodworkers to forget to regularly back-up their CNC data and find themselves at a serious disadvantage when a disaster occurs.

While Austro is known to have been able to retrieve this data in most instances, Fourie notes that it can be a time-consuming exercise that is known for resulting in unwanted downtime.

Fourie says Austro is now able to manage this important data on behalf of enterprising participants in the industry.

“Essentially, Austro Connect allows us to secure important data on behalf of our customers. Should an unforeseen event occur, they will know that we will be able to retrieve it for them effortlessly and cost-effectively,” he says.

Initially, the company will start implementing the service by backing up data manually with the intention of eventually rolling out Austro Connect “off-site” from its offices using 3G and cloud-based systems.

Importantly, this service allows Austro to back-up data from all machines and not only from Biesse units, which are already a dominant player in the southern African woodworking market.

Because users can scale as needed, they are only charged for the services they use and do not pay for unused capacity. This payment system makes cloud hosting a relatively inexpensive method of storage.

One of the potential benefits of this offering could include reduced insurance costs; however, this needs to be discussed with individual insurance companies,” says Fourie.
Introducing the Total Saw Blade Management System

Austro is pleased to announce the launch of the Austro Mark, a 2D coding system that will revolutionise how we manage saw blade usage.

Find out more at www.austro.co.za

Additional benefits include providing Austro’s technical teams with remote access to the CNC machine, enhancing its support.

The Austro mark

Another major drawcard at the event will be the Austro Mark, a two-dimensional coding system that will record critical information related to customers and their saw blades.

All customer blades will carry a QR code that will provide Austro sharpening personnel with all the necessary information they need to help customers extend the life of these consumables.

Critical data on the sharpening history of the blade and its use will be stored at Austro’s premises in Roodepoort and shared with the customer.

Fourie says that one of the most important benefits offered by this system is its ability to prevent over-running the blade—a practice that he sees all too often in the industry.

“Over-running compromises the overall life of the blade, as too much tungsten-carbide has to be removed to sharpen it. Ideally, you only want to touch the blade—commonly referred to as ‘licking’ the tungsten carbide in the steel-related industries,” he explains.

Fourie says that over-running can result in as much as 0.4mm of tungsten carbide being sacrificed from the blade, as opposed to the accepted practice of only 0.2mm.

This drastically impacts on the life-cycle of the blade and is therefore a serious concern for Fourie and the Austro team considering that the cost of an entirely new blade is 10 times the price of one sharpening.

In order to encourage better sharpening practices in the industry, the Austro Mark service will also allow the company incentivise best practice in sharpening.

He says that the system has been accompanied with a loyalty programme that will see Austro provide a free sharpening service after every 10th sharpening undertaken by its customers. In addition to sharing trends collated from the blade with customers, Austro will also be able to streamline its own sharpening lines by being able to pro-actively respond to trends.

“This is a significant advantage for us. The fact that we will be able to merely scan the blades when they arrive at our facility is a major benefit, resulting in significant improvements in efficiencies on our front,” says Fourie.

Wood Southern Africa & Timber Times has never missed an Austro open day and it looks forward to seeing you at this year’s event. See you there!
Sharpening history of the blade will be stored at Austor’s head offices.

The QR code system brings a host of benefits, including encouraging better sharpening practices.
POLISHING PROCESS FOR HIGH GLOSS FINISH (WOOD)

PREPARATION STEP 1
RAW WOOD PREPARATION

PROCEDURE: Flatten and create an even surface before priming.

PRODUCTS: Mirka Gold 150mm Disc P220

EQUIPMENT: Orbital Sander 5mm

PREPARATION STEP 2
PREPARATION AFTER PRIMER/SEALER

PROCEDURE: Flatten process after primer before first coat.

PRODUCTS: Mirka Gold 150mm Disc P400

EQUIPMENT: Orbital Sander 5mm

PREPARATION STEP 3
RAW WOOD PREPARATION

PROCEDURE: Flat to even surface, removing any fish eyes, pin holes or high spots.

PRODUCTS: Polarstar 150mm Film Disc P1200

EQUIPMENT: Orbital Sander 5mm

PREPARATION STEP 4
PANEL PREPARATION

PROCEDURE: Wet the panel with sufficient water before sanding.

PRODUCTS: Water

EQUIPMENT: Car system Pump Spray Bottle

PREPARATION STEP 5
WET FLATTING

PROCEDURE: To create a lighter scratch pattern with spongetop, disc and water. 1st step = P2000, 2nd step = P4000

PRODUCTS: Abralon 150mm Disc P2000 and P4000

EQUIPMENT: Orbital Sander 5mm

POLISHING STEP 1

PROCEDURE: Apply spur from the outside radius to the centre and back until clean whilst the buff is in motion.

PRODUCTS: Spar 200mm White Wool Mop

EQUIPMENT: Six Speed Polisher

POLISHING STEP 2

PROCEDURE: Polish surface until flattening scratch pattern is removed. Always plan polishing at a slow speed.

PRODUCTS: 200mm White or Black Wool Mop

EQUIPMENT: Presta 6-12 Ultra Cutting Cream

POLISHING STEP 3

PRODUCER: Second polishing step to remove any fine scratches and bring out shine.

PRODUCTS: Presta 1500 Chroma Ultra Polish 200mm Black Wool Mop

EQUIPMENT: Six Speed Polisher

POLISHING STEP 4

PROCEDURE: Final polishing step to remove swirl marks for a high gloss finish.

PRODUCTS: Presta 2000 Chroma Swirl Remover 200mm Blue Wool Mop

EQUIPMENT: Six Speed Polisher

POLISHING STEP 5

PROCEDURE: Apply Spray and Shine and polish by hand.

PRODUCTS: Presta Spray and Shine

EQUIPMENT: Microfiber Cloth
Abralon® is a unique, multifunctional sanding material developed for tackling both smooth and profiled surfaces. Its patented, flexible construction allows it to create a smooth sanding pattern on angled surfaces and edges while minimizing the risk of pressure marks. The flexible weave also allows water and air to pass freely, making it suitable for both dry and wet sanding, by machine or by hand.
A full wrap

Being able to supply a quality product and comprehensive back-up service as a foundation will never fail a business - even in challenging economic conditions. By David Poggiolini

There is only one positive that arises out of a downturn in economic conditions and that is the correction of the market. More than ever, being able to provide quality products that are backed by a comprehensive after-market service is imperative, and this is exactly the approach being taken by Alto Door Manufacturers.

“Nothing has changed since we started operating in 2010. Top quality products and services remain a driving force for the company,” Alto Door Manufacturers’ Rodger Ganda told Wood Southern Africa & Timber Times during a visit to the operation in May.

The company manufactures wrap, impact, veneer, semi-solid and solid doors, do-it-yourself kitchen carcasses, built-in cupboards, postform tops and office furniture, complemented by its cut-and-edge and drilling services.

Alto Door Manufacturers has mainly been supplying the Johannesburg market, to date.

He says this focus on only supplying quality products and services has been instrumental in an industry that is extremely over-traded, and mainly dominated by smaller players.

While price-cutting is rife in the industry, Alto Door Manufacturers is one of those companies that prefers competing on all-round quality.

“Competition is always good and our customers have never minded paying extra for a good quality product and back-up service. We have taken this approach in all the markets we
supply, ranging from the growing DIY sector through to our middle-income and upper-income earning customers,” says Ganda.

In Jozi

Based in the Johannesburg central-business district, the company’s 12 000m² factory employing 27 people consumes between 4 000m² and 5 000m² of board a month. This includes both chip and melamine-face board products from Sonae Novabord and PG Bison.

Meanwhile, the company upgrades high-gloss and wrapped imported board products from companies, such as Niemann and Surio.

He says one of the company’s strengths has been its focus on all products, as opposed to singling out fast movers and focusing on them. This has provided Alto Door Manufacturers with a variety of revenue streams, despite the waxing and waning of contemporary trends.

At present, the company employs 27 people who work standard five day shifts, and over Saturdays when the need arises due to workload at the shop.

He says the company operates beam saws for optimising the boards, an edge-bander, drilling machines and a multi-borer. Recently, the company bought a Technowrap Plus 2900 DB from WoodTech to boost vacuum pressing capacities at the operation.

Ganda says that Alto Door Manufacturers has been using WoodTech’s vacuum press technology since its inception.

Due to the impressive performance of the machine over the years, the company decided to opt for another WoodTech unit from the company.

“We have always stayed loyal to suppliers of equipment that has worked well for us over the years. Meanwhile, we also place significant credence on the after market sales support we receive from either the original equipment manufacturer or agents,” he says.

Doubling up

The new machine has two tables, tripling the existing capacities on the factory floor.

Anton van de Reede, factory manager of Alto Door Manufacturers, says vacuum pressing cycle times has been reduced significantly, since the machine was introduced to the factory.

Contact Details:
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Sales: +27 78 801 0992
Website: www.woodtech.biz
Email: info@woodtech.biz

JUNE SPECIAL

Technowrap Plus 2900 Vacuum Press, double bed

Normal Selling Price
R567 956.00

Special Price
R530 000.00
(Price valid until 30 June 2016)

Price excludes VAT, transport and installation costs.
“We are now able to handle much more components in a single shift. We are pressing every five minutes in an eight hour production cycle,” says Van de Reede.

Ganda says one of the advantages offered by the machine is that it computer operated. This simplifies operation of the machine and provides accurate control of the correct temperatures required for pressing.

He has assigned one operator to both units who is assisted by a worker in laying out of the table.

**Innovation driver**

One of Alto Door Manufacturers’ traits is its willingness to explore new methods and supply-chain partners to improve quality and lower total operating costs.

Ganda says this approach even spans right down to the consumables used in the daily operation of the business, including edging and adhesives.

“We are not dedicated to one specific supplier. We make our decisions based on what is best for the quality of the end product. Essentially, we use a host of imported products, at present,” he says.

At the time of writing, the company was exploring new supply possibilities for its adhesives requirements. Ganda is extremely concerned about the current high prices of adhesives that, he says, have a profound impact on the overall costs of operations. *Wood Southern Africa & Timber Times* looks forward to revisiting the operation which is expected to undergo extensive expansions this year to cater for a growing demand for its output.
**Technical Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Technowrap Plus 2900 Vacuum Press</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Width</td>
<td>1.33m</td>
</tr>
<tr>
<td>Effective Length</td>
<td>2.9m</td>
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<tr>
<td>Vacuum</td>
<td>65m³/hr</td>
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<tr>
<td>Heaters</td>
<td>45kW</td>
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<tr>
<td>Machine Dimensions Single Table L X W x B</td>
<td>3.6m x 3.7m x 1.8m</td>
</tr>
<tr>
<td>Machine Dimensions Double Table L X W x B</td>
<td>3.6m x 5.7m x 1.8m</td>
</tr>
</tbody>
</table>

**Advantages**

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Technowrap Plus 2900 Vacuum Press</th>
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</thead>
<tbody>
<tr>
<td>PC Controlled</td>
<td>Yes, TeamViewer for online back-up</td>
</tr>
<tr>
<td>Heaters</td>
<td>Infra Red</td>
</tr>
<tr>
<td>Precision Temperature Feedback</td>
<td>Yes, PC interface</td>
</tr>
<tr>
<td>Secure Clamping Mechanism</td>
<td>Yes</td>
</tr>
<tr>
<td>Unique Controlled Wrapping Process</td>
<td>Unlimited wrapping processes</td>
</tr>
<tr>
<td>Manual Back Up</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Shanghai beckons

Players in the international forestry products sector will convene in Shanghai at the end of this year.

Furniture Manufacturing & Supply China 2016 (FMC China 2016) will be moved back to the Shanghai New International Expo Centre from 8 to 11 September 2016.

The reunion with Furniture China will ensure the show covers both the upstream and downstream components of the furniture industry.

The show will focus on woodworking, CNC technologies, upholstered furniture, coatings, furniture adhesives and coatings, office furniture accessories and components, furniture hardware and fittings, wood and surface décor, furniture fabric and upholstery components in two indoor halls and six outdoor halls.

Also present at the event will be Jiangsu Furniture Brand Alliance, upholstery companies and design agencies in East China, including Yuhang Famous Fabrics City, Damang Town, Tongxiang Town and Jiaxing Fabrics.

They will display new fabrics, new techniques and new products.

In December, the first we-chat forum was successfully held by FMC and Water-Borne Coating Platform. More than 40 coating companies and nearly 60 furniture-manufacturing companies participated in the online forum. This forum will be held again this year.

FMC China 2016 will launch the second Furniture Manufacturing Campaign, known as 'Replacing Labor with Machines'.
The Sino-FX Group connection

A noticeable trend in the South African woodworking equipment industry is a gradual move towards the use of capital equipment from Asian countries. This can be attributed to the significant advances made to the technology by original equipment manufacturers (OEMs) from these countries over the years. China, for example, has made significant strides in the overall quality and presentation of its woodworking machines. In several instances, they are robust enough to handle the demands of high-production lines, also making them very appealing to large-scale producers.

Straight forward design

Their straight-forward design, devoid of all the extra “bells and whistles” that drive up the costs of the machines and complicate their operation and maintenance, is an added advantage.

However, one of the biggest benefits these machines offer the South African woodworker is their affordability at a time when the low value of the Rand has had a significant negative impact on the cost of imported capital equipment.

The current exchange rate scenario may stifle the expansion plans of small and medium sized companies that do not have the capital needed to finance costlier solutions from the European Union. The region has long been a dominant force in the entire wood products value chain, starting from harvesting of timber through to semi-value added and completely beneficiated wood products.

The FX Group has been a user of Asian processing equipment in its own production lines in South Africa for many years, and has long recognised the role that these machines can play in enabling small and medium-sized companies enter the market.

Agreement clinched

As such, it recently entered into a cooperation agreement with China FOMA (Group), to distribute board-processing equipment. This agreement was signed in South Africa between Mohammed Bera, major shareholder in The FX Group, and Prof Lui Qun, chairman and CEO, of China FOMA.

Mohamed Bera of the FX Group tells Wood Southern Africa & Timber Times that the company will import beam saws, table saws, small drilling lines and edge-banding gear through China FOMA group.

These will all be displayed at the company’s showroom in Benoni, Gauteng, South Africa, while The FX Group gradually upgrades its own stores with the China FOMA source range of board-processing equipment.

Since 1979

Like so many Chinese companies, China FOMA is a state owned company. It has been operating since 1979 and has the full weight of its main share-holder, the Chinese government behind it.

The company’s headquarters are in Beijing and it has a number of listed subsidiaries, including the likes of Changlin, a construction equipment manufacturer that has already exported a number of machines into Africa.

“China FOMA also has a long standing joint venture with Yamaha through its subsidiary Linhai Power Machinery Group and manufactures a range of motors and engines,” says Bera.

One of China FOMA’s main focus areas is the design and manufacture of forestry, sawmilling and woodworking equipment. It is the largest manufacturer of this type of equipment in the country, where it has as much as a 50% market share.

China FOMA has also exported machines to the United States, Canada, Japan, Germany, India, Malaysia and the Philipines, as well as a number of African countries.

Bera says that being a state-owned company, China FOMA is also the chair company of the Chinese Woodworking Equipment Manufacturers Association.

Immense opportunity

He informs that this has opened immense opportunity for future initiatives that The FX Group will be exploring with China FOMA, which is heavily focused on driving two-way trade initiatives between South Africa and China.

Some of these projects will involve promoting the export of value-added timber products from South Africa to China.

As Bera notes, there are many reasons for exploring greater co-operation between the two countries’ woodworking industries.
Shipping rates from South Africa to China are very competitive, considering that many of containers return to the Asian country empty.

In addition, the raw material in certain instances is well priced and the cost of South African labour, in Dollar terms, is lower than in China.

Faith in SA

Bera also reports that the company's Chinese partners are convinced that the energy shortage in the country is being resolved, facilitating future production line expansion in South Africa.

These projects are being planned to be rolled out over the medium term. However, due to their very early stages, he is reluctant to disclose more information at this point in time.

"China FOMA has a significant interest in southern Africa and is prepared to consider large projects if there is long term economic logic to them," says Beira.

"China FOMA are also well placed to access significant funding via the increasing number of Chinese Banks and investment companies looking at our region."

The FX Group has already introduced over 100 of Chinese table saws and about 40 edge-banders to the country. As such, it already established the foundations of an after-sales service footprint to support the machines.

At the time of writing, the company had started bolstering its existing technical capacities to provide a comprehensive back-up support for its new sales activities, as well as developing the infrastructure to carry a large stock-holding of spare parts for the machines.

The FX Group is mainly focusing on selling these machines to small- and medium-sized companies operating in the board-processing industry, and will gradually increase the range as demand for the offering grows.

This means that it will have a complete parcel of offerings to supply the market, ranging from value-added board products through to hardware and the machinery needed to manufacture quality cabinetry by kitchen manufacturers and shop-fitters.

The timing of the introduction of the equipment under a formalised agreement could never have been better. A volatile Rand and tough economic conditions means that local producers will be on the scout for equipment that strikes a healthy balance between quality and cost.

We look forward to seeing the first units when they have arrived in the country!

The FX Group

Bringing new surface designs to your world

We are pleased to announce the commissioning of the first 6 foot wide high gloss production line in Southern Africa.

THE FX GROUP | 011-422-4839 | 10 Bradford Street, Benoni | www.thefxgroup.co.za

May 2016 // Wood Southern Africa & Timber Times
It’s WoodEX for Africa time

Gallagher Convention Centre in Midrand is a beehive of activity in preparation of the fourth edition of WoodEX for Africa

WoodEX is being held from 9 to 11 June 2016, and it is now time to register online to attend the show for free. This show, the only trade exhibition in Africa dedicated to the timber industry, creates the ideal platform for wood and woodworking professionals to be on the frontier of the timber industry and to network with key industry players.

WoodEX for Africa Director, Stephan Jooste, says the show is representative of a large part of the South African timber industry and presents a wide range of machinery, tools, fittings and finishes, components, equipment, new technology and materials in the timber industry.

“The event demonstrates the value of wood as a sustainable, renewable and versatile product, and is a showcase for introducing international trends into the African marketplace. Through WoodEX for Africa exhibitors, project partners and visitors can connect with specialised dealers, catch up with the latest timber trends, secure new business contacts and compare excellent deals.

This year we received a lot of interest from European countries such as Germany, the Czech Republic and Turkey and also from eastern African countries such as Kenya and Uganda. We expect an increased number of international visitors and exhibitors. It is definitely the show to visit if you are involved in the timber industry,” says Jooste.

WoodEX for Africa 2016 is supported by the major industry associations, including the Wood Foundation, The South African Wood Preservers Association (SAWPA), The Institute for Timber Construction in South Africa (ITC-SA), The Institute of Timber Frame Builders (ITFB), Sawmilling South Africa (SSA), the Forestry Association and the Thatchers Association of South Africa (TASA).

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9-11 June 2016
Gallagher Convention Centre | Johannesburg | South Africa
info@woodexforafrica.co.za | +27 (0) 21 856 4334
www.woodexforafrica.com
The green building movement has gained significant traction in South Africa since the first bout of rolling blackouts in 2006.

Not only has the movement emphasised the need to reduce the overall carbon footprint and energy consumption behaviour of the structure, but also placed the spotlight on the materials being used to design and build.

Across board, the supply chain to architects, structural engineers and contractors has evolved at various levels to adopt “greener” practices.

However, timber continues to stand out in its abilities to provide an environmentally-sound structure.

American hardwoods immediately come to mind when considering developments made in the field of “green” builds globally.

A few sound examples include the Timber Wave by Amanda Levete Architects in American red oak, the Sclera Pavilion by David Adjaye in American tulipwood and Portcullis House by Hopkins Architects in American white oak.

A major force behind this drive has been the American Hardwoods Export Council (AHEC).

However, Neil Summers, a timber dimension consultant to AHEC, reports that a host of new opportunities are emerging for American Hardwoods in exterior and structural applications.

For example, a more recent development is cross-laminated timber using American Tulipwood, or Yellow poplar. This technique was used by dRMM Architects to design the Endless Stair.

The structure was built from a No2 Common tulipwood. Tulipwood is three times stiffer in rolling shear than spruce.
Interestingly, 14.5 tonnes of CO₂ was stored in the structure which Summers says is actually greater than the 13.1 tonnes of carbon emissions required to manufacture, deliver and assemble the whole structure.

Rich pallet

He notes that one of the many benefits offered by American hardwoods for designers is the variety of colours and grains.

He explains that various timber modification techniques are being used to achieve interesting exterior and structural applications using American hardwoods. These include chemical and thermal modification techniques for window joinery, timber cladding and decking.

However, thermal modification continues to widen the application of American hardwoods in structural applications.

American hardwoods suited to thermal modification include ash, tulip wood, soft maple, red oak, yellow birch and hickory or pecan.

The technique has given rise to interesting designs such as the Ash Bench by Khalid Shafer in Dubai and the Infinity Bench by Martino Gamper, as well as the thermally modified decking at Warner Brothers headquarters in Grays Inn Road, London, United Kingdom.

There are many key benefits of thermal modification. As Summers points out, this includes enhanced durability.

In addition, there is no staining or sticker marks, or need for Stainless steel fixings.

The material also provides excellent machining properties and better thermal values - between 20% or 25% greater than unmodified equivalents.

He also points to consistent colour and no timber disposal issues associated with this technique.

However, there are disadvantages of thermally modified timber.

For instance, the material is not available in sizes of less than 50mm, requiring engineering for larger section sizes, while bending strength is also significantly reduced.

Popular premium

With the strengthening of the US Dollar and the already weak South African rand, American hardwoods have become even more expensive for South African buyers. Nonetheless, AHEC notes that they are well-established and well-regarded for their quality and consistency and there remains a ready market for them.

According to the latest statistics released by the United States Department of Agriculture (USDA), total exports of United States
hardwood lumber and veneer to South Africa reached a value of USD 1,783-million in 2015, increasing by seven percent over 2014. Despite currency fluctuations, the growth in exports can be partly attributed to the fact that South Africa's design community is developing and increasingly looking towards establishing itself on the world stage.

Add to this the country’s leading role on the continent in terms of pursuing “greener” building methods.

Clearly, American hardwoods are here to stay!

---

**Life Cycle Assessment of US Hardwoods**

- PE International (now Thinkstep) commissioned by AHEC
- Conforms to ISO 14040 – independent & expert reviewed

“Cradle to gate plus transport into export markets”

- Inputs of Energy, Minerals & Water
- Waste and Discharges to Air, to Water & to Soil
Total carbon balance of U.S. sawn hardwood at point of delivery to export markets outside N. America

![Graph showing carbon emitted, carbon stored, and carbon balance in metric tonnes CO₂ equivalent.]

- Carbon emitted
- Carbon stored
- Carbon balance

---

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US timber for SA’s sustainability drive

Sustainability has become a major focus for South Africa, and property developers and architects are placing credence on the materials they choose for their construction projects.

This interest in creating a “green” economy is expected to gain significant traction with or without the introduction of a carbon tax in 2016, considering the state of electricity generation capacity in South Africa - a scenario that encourages the more efficient use of scarce power resources - as well as its commitment to international carbon-reduction strategies.

Timber remains one of the “greenest” forms of construction materials, and the American Hardwood Export Council (AHEC) is actively promoting the sustainability characteristics of its hardwoods.

According to Rod Wiles, regional director of AHEC, between 1953 and 2012, the volume of United States hardwood standing timber more than doubled, while the area of forest increased by 18%.

About 90% of the hardwood producing land in the United States is in the hands of more than 4-million private and mostly non-industrial landowners. According to Wiles, it is usual for a sale of hardwood logs to occur only twice in an owner’s lifetime.

At present, the ratio of United States hardwood growth to removal is 2.4 to 1.

He says 304-million m$^3$ is grown, 128-million m$^3$ removed and 109-million m$^3$ lost due to mortality.

This is complemented by the material’s ability to offset carbon emissions. In 2014, for example, more than 1 500 metric tonnes of carbon was emitted by saw hardwood at the point of delivery to export markets outside of North America, but more than 2 500 metric tonnes were stored by the material.

Sustainable

One of the competitive edges offered by American hardwoods is the transparent approach taken in communicating important sustainable traits of the material.
Wiles points to American Hardwood Environmental Profiles (AHEPs).

This is a consignment-based reporting system on the environmental impact across eight key categories of delivery to the overseas customer.

All United States hardwood lumber exporters can now supply these with every consignment shipped.

A sound example of the “green” properties of timber is a 500m² American white oak deck that was built for the United States pavilion at Milan Expo 2015.

Wiles explains that the deck is better o neutral on a cradle to grave basis. While in use, the deck stores 14.5 metric tons of C02, and it takes 25 seconds for the white oak used to be replaced by new growth in the forest.
Meanwhile, the Invisible Store of Happiness used 2.6 m$^3$ of cherry and maple. The carbon footprint of the structure is 444.8 kg and 825 kg of carbon will be stored over its lifetime.

It is a unique experiment between artist Lauren Ellen Bacon and furniture maker Sebastion Cox. Natural regrowth across the vast American forest replaces the cherry and maple used in just 15 seconds.

The Endless Stair is another unique project that was designed by dRMM, an architectural firm, and engineered by Arup, a consulting engineering house.

Natural regrowth of the vast American forests replaces the tulipwood used in the Endless Stair in just 120 seconds.

As much as 100 m$^3$ of the material was used for the structure. The carbon footprint of the structure was 13 177.29 kg and it has stored 14 571.5 kg over its lifetime.

Red oak makes up 35% of the total hardwood timber supply, white oak 15%, tulip wood 9%, soft maple 6%, and hard maple 5%, while the balance comprises a host of other species.

With South Africa following international trends in sustainable design and its alignment to international carbon reduction commitments, American hardwoods have a ready market, despite the current Rand/Dollar exchange rate.
How long does it take to grow the American hardwoods used in our projects?

120 seconds


The Endless Stair is an extraordinary installation designed by the dRMM architecture practice, led by Alex de Rijke and engineered by Arup. Natural regrowth across the vast American forests replaces the tulipwood used in the Endless Stair in just 120 seconds.

For more information visit www.americanhardwood.org

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<table>
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<th>SPECIES</th>
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<tr>
<td>CARBON FOOTPRINT CO₂</td>
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Prime American cuts

South Africa remains a significant market for American hardwoods, which adhere to very strict rules, writes David Poggiolini

South Africa remains a large consumer of American hardwoods. As such, consumers of this material would do well to familiarise themselves with the National Hardwood Lumber Association’s (NHLA) rules which were designed to provide a measurable percentage of clear, defect-free wood for each grade.

Established more than 100 years ago, the NHLA Rules for grading North American hardwood lumber make up one of the only standard grading systems in the world.

“Thus, the grade of lumber purchased by a manufacturer will determine both the cost and waste factor that is achieved,” says Dana Spessert, chief inspector of the NHLA.

He explains that hardwood lumber is graded on the basis of the size and number of cuttings (pieces) that can be obtained from a board when it is used in the manufacture of hardwood products.

There are basic principles deployed in the grading of hardwoods, he notes. Grading is done from the poor side of the timber and each clear area of the board is measured and

Kiln drying: 8-10% average moisture content
considered a "cutting" if large enough. Spessert explains that clear areas of the board are valued using the cutting unit method.

**Independent grading**

First, Spessert says each side of the board must be graded independently with no regard for the opposite side.

If different grades are achieved on opposite faces, the one with the lesser grade will be the poor face.

If both faces have the same grade, the side with the least number of cutting units is the poor side.

He says a cutting is a portion of a board or plank obtained by cross-cutting or ripping or by both.

He says diagonal cuttings are not permitted.

Spessert says characteristics allowed in clear face cuttings include sapwood, heartwood, glasworm, gum streaks, burl, sticker mark and mineral streak.

Characteristics not allowed in clear face cuttings include sticker mark, mineral streaks, sticker stains, unsound knot, bark pocket, sound knot, wane, grub holes, pitch and bird pecks.

The cutting unit is one inch by one foot, and one square foot contains 12 cutting units.

The surface measure is achieved by multiplying the width of the board in inches by the length of the board in feet and dividing the sum by 12, rounding up or down to the nearest whole number.

In terms of first and seconds (FAS), the minimum size of the board is 6" x 82', while the minimum size of cutting requirements are 4" x 5' and 3" x 7'.

Spessert says that No1 Common Red Oak board has a minimum size of 3" x 4', and the minimum size cutting permitted 3" x 3' and 4" x 2'.

If better face meets FAS and poor face makes No1 Common, the grade has potential to be F1F or selects.

The minimum size cutting permitted on No2 Common requirements is 3" x 4', and the minimum size cutting permitted 3" x 2'.

Although the NHLA grading rules were originally conceived for the United States market, a reasonable knowledge is essential for buyers worldwide in order to attain their expected degree of quality.

Dana’s valuable experience, which encompasses over 27 years as an inspector of hardwood lumber, will certainly help educate buyers of hardwoods in South Africa.
How long does it take to grow the American hardwoods used in our projects?

15 seconds


The Invisible Store of Happiness is a unique experiment between artist Laura Ellen Bacon and furniture maker Sebastian Cox. Natural regrowth across the vast American forests replaces the cherry and maple used in the Invisible Store of Happiness in just 15 seconds.

For more information visit www.americanhardwood.org
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<table>
<thead>
<tr>
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<tr>
<td>CHERRY</td>
<td>MAPLE</td>
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<td>CARBON STORED CO₂</td>
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<tr>
<td>CARBON FOOTPRINT CO₂</td>
<td>444.8 kg</td>
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- Max Cutting Height: 100mm
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A Canadian logging company needed to hire another lumberjack, the first guy to apply was a short little skinny fellow, who was laughed at by the manager and told to leave.

“Just give me a chance,” the little guy pleaded.

“Okay,” the manager replied, “Grab your axe and cut down that cedar over there,”

Two minutes later he was back at the managers office, “Trees cut, do I get the job?”

“I don’t believe it, that is so much faster than even my best lumberjack could have done it, where did you learn to use an axe like that?” the manager inquired.

“Sahara Forest,” the little guy replied.

“Don’t you mean the Sahara Desert,” the manager corrected him. “Sure that’s what they call it now.”
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