



# Southern Cross Engineering Group News

Industry news and views from the Southern Cross Engineering Group – Vol 14: Spring 2011

## Another bulk gypsum conveyor system for Boral

The SCE Group has secured a second design/build contract from Boral Australian Gypsum Ltd for a conveyor system at Port Melbourne to transport gypsum from a ship to the shore-based processing plant.

Boral was impressed with the Group's performance and completion of the original contract and invited them to tender for the Melbourne project.

The conveyor system had to be capable of delivering bulk gypsum

there are no dust leakage issues. They have been designed with internal flanges to retain aesthetic appeal externally.

The project consists of a wharf-side receival hopper and a series of three belt conveyors to the shore-based processing plant.



Conveyor Two spans 80 metres diagonally and rises 20 metres over the roadway. It is supported with angled support braces to minimise deflection. Specialist wind analysis has been completed, due to topographic effects present at Port Melbourne.

Conveyor Three is 130 metres long and carries gypsum along the length of a new bulk store, where it is discharged by a light-weight travelling plough, designed by SCE engineers, which has allowed a much lighter building structure to be designed.

The pipe galleries have been manufactured at SCE Group's main Christchurch workshop, using upgraded rolling and SAW welding equipment. The fully fitted-out, painted 21 metre long galleys are



from a ship moored at the port to the manufacturing plant, and included spanning a busy Melbourne port roadway. SCE tendered an innovative concept, utilising pipe galleries, that met Boral's expectations and budget.

Pipe galleries offer significant advantages over a truss structure. Lighter-weight construction translates into lower costs and, because the pipe is fully-sealed,

Conveyor One is a 50 metre, 2.8 metre diameter pipe gallery which extends from the hopper to a 24 metre high structural steel transfer tower, elevated to allow for normal port activities. These transfer towers are located either side of the port roadway and support the pipe galleries. They each consist of approximately 50 tonnes of bolted steel members.



then shipped to Melbourne and bolted into complete sections, ready to be lifted into place.

This project's scope illustrates SCE's ability to design, manufacture and deliver innovative solutions in materials handling throughout Australasia. Boral has recognised this by awarding repeat business, which is a credit to the SCE Group's engineering capabilities.

## SCE at LIGNA



The SCE Group was well-represented at the recent LIGNA show in Hanover, Germany

The show proved to be a very successful one for the Group, with many timber industry personnel attending from both Australia and New Zealand.



We were represented by Graeme McMaster, Kevin Everest, Scott Dixon and Alex Wilson, all of whom were kept extremely busy for the duration of the show.

Over 80,000 visitors attended, and there was a real sense of optimism and confidence from all exhibitors and suppliers, with a very positive outlook for the future.

A number of our suppliers introduced new products to the international marketplace. One of those was Woodeye, a Swedish company who are exclusively represented throughout Australia and New Zealand by SCE. They showed the next generation of scanning systems for drymill operations – arguably the world's best in their field.

The LIGNA show is an ideal forum to evaluate new technologies that will complement our stable of products, as well as enabling us to expand our opportunities. The next SCE newsletter will introduce some new products, sourced from this LIGNA show.



THE SOUTHERN CROSS ENGINEERING GROUP





## We're in great shape after the shakes – and we're staying that way!

The SCE Group has not allowed the devastating earthquakes of the past months to deter them from trying to remain operational throughout this very trying period.



All staff involved in the quakes showed great discipline, putting the regular evacuation drills to good use and looking out for one another. There are also incredible stories of how some staff then went on to help others in the wider community. On the back of the recent economic downturn, it has been an extremely testing time for all concerned.

Personally, staff and management have been affected in different ways; some with little or no damage, some in temporary accommodation due to significant property damage and some in the red zone - all facing a significantly changed future.

All staff have remained and the hope is that this will continue to be the case, despite the pressure some families continue to feel. The Christchurch manufacturing facility did not suffer any structural failures, but the scope of repair includes major remedial work in the fitting and fabrication workshops and minor work in the administration block. However, along with the repairs, the Group has experienced a high work level during the first half of the year. Resources have risen to the challenge of handling the



influx of work, with the design office tripling in size and the workshop increasing by a third. The Group's systems of operation are being constantly evolved to improve information flow and manufacturing efficiencies, with recent equipment upgrades supporting this. SCE's Managing Director, Graeme McMaster comments, "As well as continuing our current projects, we are also well-placed to make a contribution to reconstruction work within the city and the wider Canterbury region. We have the capacity to take on additional work as opportunities arise."

## New Australian quarry project

Hanson Construction Materials Australia contracts SCE to upgrade its quarry plant.



The site is at Kulnura, which is situated one hour north of Sydney. This project is the second screening and crushing project that the SCE Group has been awarded in recent times. The scope includes the design, fabrication and installation of 12 new belt conveyors and structures, the removal and modification of several existing conveyors and the installation of 5 new screens and 2 crushers. Plant capacity is 500tph and total length of all new conveyors is 550m.

An alliance with an Australian-based engineer with extensive industry experience has allowed SCE to tender for these quarry projects.

Design work for the project has been mainly completed in our Auckland office and most items are being fabricated close to the site, due to the size of the trusses, etc. Sitework is due to start in August with a completion date of November 2011.

## SCE visits Interwood and Leadermac in Taiwan

Marketing Executive Kevin Everest recently visited Taiwan to attend the Taiwanese Woodworkers' Show (Interwood) in Taipei and then joined Leadermac to celebrate their 40th anniversary celebrations.

More than 52 Leadermac dealers and suppliers and over 1200 guests from around the world attended the company's anniversary celebrations, which were conducted in traditional Taiwanese style.



Leadermac took the opportunity to introduce their new range of products, which included a Grindermac with optical setting system, a unique flooring line moulder coupled to an LMC double-end tenoner and an improved optical setting stand.

Much interest was also shown in the new Leadermac uPower moulder, which features HSK and full computer setting to substantially reduce set-up times and increase up-time.

## Marusumi increases chip volume with new debarker drum



Marusumi's chip mill at Whangarei is replacing an existing debarker drum with a new drum being manufactured at SCE's Christchurch workshop.

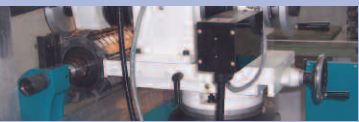
The existing drum is 9' x 60' in two sections of 25mm plate with angle iron lifters and straight bark slots. The updated model is 9' x 60' in one section and constructed in 32mm plate with hardened bar lifters and angled bar slots. It is designed to run on the existing rubber tyre system.

The new drum will provide a 2-3% reduction in white wood loss and an annual chip volume increase on the 9' drum of 12,000 tonnes per year. It is due for installation and commissioning in December 2011.



THE SOUTHERN CROSS ENGINEERING GROUP





## SCE designs and builds specialist log infeed system for SCFP at Milburn

 SCE's Kevin Everest was contacted to design and build a log infeed deck, step feeder and log haul conveyor/bull chain to feed a new mill for SCFP at Milburn in Central Otago.

Log SED is 15-35cm with lengths of 2.4m to 4.0m.

Other plant consists of a Nicholson A5 debarker, Quad Sawquip bandsaws, high speed board edger, canter gang edger, trimmer optimiser and a 41 bay bin sorter and stacker.

Murray Daniel, SCFP site manager comments, "The log infeed system designed by the SCE Group is well-constructed and a sound piece of heavy engineering. It has been purpose-built for the application. Just what you'd expect from SCE."



The system consists of two log infeed decks, with lengths of 6.5m and 3.5m respectively. They are both elevated at 4.7m above the ground, have a speed of 30m/min. and a total capacity of 20,000kg.


A step feeder with 10mm thick side skirts has an infeed height to match the decks and a discharge height to match the log haul conveyor. It has a piece count of up to 12 logs/min.

The log haul conveyor/bullchain is 9.2m in length at an elevation of 4.7m and has a speed of 90m/min. approximately. It has a centering roller driven by a 3.5kW motor.

The mill, which is due for dry start-up in September, will have a capacity of up to 1,000m<sup>3</sup> logs per shift with 500m<sup>3</sup> of timber output.

## Sawmill upgrade increases production at Mitchell Bros.



 Sawmill conversion and production has been increased with a major plant upgrade and site modification at Mitchell Bros. sawmill in Darfield.


Work on the upgrade commenced in December 2010 and Mitchell's were able to close the mill for the Christmas break a week earlier than expected. Kevin Everest said that this proved to be very fortuitous, as the original foundations were unable to be used.

Main features of the upgrade included a new SCE independent 3-knee hydraulic carriage, running on plastic wheels, onboard log turners, cant flippers and Brownsville turners; A&E carriage setworks and minimum opening face shape scanner; reconditioned CM&E headrig slabber; new SCE 75kW AC electric winch and log

loading table; combination of new and existing chip handling; extensive site modification including building and foundations; new mill electrics and power supply.

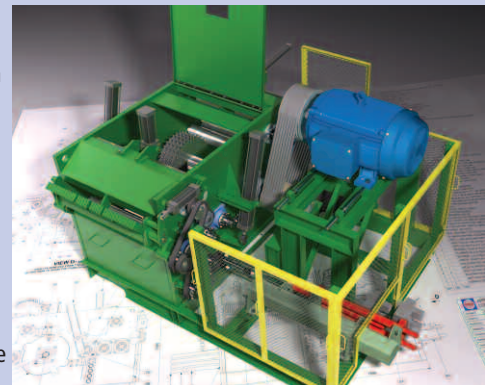
Co-director Tony Mitchell comments, "The mill upgrade has improved reliability and reduced downtime, allowed us to cut more accurately, increased log conversion and given us the ability to increase production without increasing staff levels. Previous mill output was 60-70m<sup>3</sup> at around 55% conversion, our target production rate is an average 85m<sup>3</sup> at 58% conversion."

## New Generation Edger for McAlpines

 SCE have supplied a New Generation Edger to McAlpines sawmill at Rotorua as a replacement for their existing SCE machine, installed in 1992.

SCE have been building edgers since 1972. The design is robust, with many improvements being made over the years. This New Generation Edger has updated features which include faster feed speeds, the latest industry-standard involute spline arbour, a robust saw guide design and a minimum saw setting on each moving saw to allow a cut down to 42mm.

The main frame is constructed of steel beams which form a substantial platform and the side plates are profile-cut from 40mm steel plate. They are attached to each other to form a clam opening assembly. The saw box is line bored to ensure perfect alignment of all bearings and shafts. Two top pressure rolls are mounted above the infeed and outfeed rolls. These rolls are knurled and hard chromed to provide a positive feed for boards and cants. Three infeed and two feed rolls give feed speeds from 45 to 160m/min depending on timber thickness and various saw specifications. A bottom-mounted splined saw arbour and a bronze saw guide system are fitted as standard, allowing thin kerf saws to be run. This results in better conversion, less sawdust waste, quicker saw changes and less horsepower used. The main drive 185kW motor has a pull-out torque of 225%FLT.



SCE's Paul Scott worked extensively with McAlpines' sawdoctors to arrive at the optimum cutting solution for this New Generation Edger, prior to the installation at their Rotorua sawmill.





## SCE completes contract for GrainCorp woodchip truck-dump receival facility



In mid-2010, the SCE Group was awarded a design/build contract to upgrade GrainCorp's existing truck-dump facility at their Portland, Victoria site. The project and commissioning has now been completed.



was required virtually full-time to successfully contain the flooding. Manufacturing commenced in July, with the first stage completed, loaded and shipped mid-October. Stage Two shipped late November. All plant was installed and operational by Christmas, with mechanical and electrical installation being carried out by local sub-contractors under SCE supervision. Final commissioning was made in March 2011, when the belly dump-truck arrived on site.

"The plant is designed to operate at 600tph, except when the truck tipper also operates in tandem. The belly dump plant then halves throughput automatically, as both systems discharge through the



GrainCorp utilises stockpiling and shiploading facilities at their eastern seaboard locations. The upgrade was due to an increase in woodchip exports from southern Victoria.

Civil, electrical and design work commenced mid-year, followed by civil works sheet and concrete piling. Allowances were needed at this stage, as the original site had a history of severe flooding, due to being built on reclaimed land and sitting above an underground spring. SCE were made aware of this and allowed for significant pump capacity which, in the event,

stockpile conveyors," said Mike St Merat, SCE's Project Manager.

Unique features include:-

- Designed & manufactured at SCE's Christchurch facility.
- Heavy duty rubber belt intake system, inter-faced with existing truck tipper system and integrated with screened-on-site system.
- Retractable belly dump ramp, allowing trucks to drive over and discharge directly into intake.
- Both woodchip systems merge at chipscreen.
- Automatically retracting 18m telescopic discharge chute.



## Saw Talk with Chris Spencer



*A regular series about Armstrong Band Saw Sharpener upgrades and equipment*



As we have all discovered by now, band saws that are not maintained properly will not cut accurately or efficiently. Yet maintenance is very simple from a saw-doctoring perspective.

We will not consider alignment or design at this time, because the basics of saw maintenance consist of very simple principals that, if adhered to, will produce a saw that cuts accurately and efficiently.

The saw must be flat or level and correctly tensioned - including the correct amount of back crown and sharp. It's that easy, but can also be very elusive if attention is not paid to detail.

One of the most important tools



in achieving this is the humble tension gauge/straight edge. This is often overlooked until cracks appear in saws due to over tensioning. This in turn is often caused by worn ends on the tension gauge or wrongly-ground tension circles. One solution is to send the gauges out to be

ground and hope they come back with the specified tension circle and are all identical.

### Armstrong Tension Gauge Grinder

Using the Armstrong Tension Gauge Grinder eliminates use of worn-out, inaccurate gauges and allows for uniform, freshly-ground gauges to be made on the spot. Having a tension gauge grinder in the filing room saves the expense and delay of sending gauges out for re-grind.

The Armstrong tension gauge grinder was developed from a design provided by Jim Reid, Head Filer at the Pope and Talbot mill in Washington State. Both convex and concave tension gauges can be ground quickly and precisely. The easily-adjusted tension gauge grinder requires no template or master for grinding band saw gauges. Although, not specifically designed for grinding RPM gauges used on circular saws, the tension gauge grinder has been used for these as well.

Two simple settings are all that is needed to re-grind your tension gauges. The large knurled hand wheel easily adjusts for tension gauges from 20ft. concave to 20ft. convex circles. The smaller, blue hand wheel positions the grinding wheel. Turning clockwise moves the wheel out; counter-clockwise brings the wheel in. This allows for very fine control of finishing grinding passes - the key to accurate tension gauges.

## STOP PRESS!



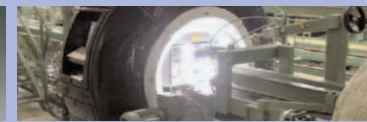
**Jeffer SSG-5 automatic straight knife grinder sold to Stillwater Lumber Greymouth.**

Contact Kevin Everest at SCE for further information on Jeffer.




THE SOUTHERN CROSS ENGINEERING GROUP





## SCE wins tender for steelwork to repair Lyttelton wharf

 The SCE Group have been awarded a contract to fabricate and install the steel beams for the re-build of the Coal wharf at Lyttelton Port.



The port suffered extensive damage to Cashin Quay wharf No. 1 on the 22 Feb earthquake and further damage in June.


SCE worked with Lyttelton Port engineering staff to assist with repairing the wharf-side coal conveyors immediately after the Feb earthquake. The elevated wharf conveyor had slumped by nearly 900mm and most of the wooden wharf piles had sheared.

SCE helped LPC get the conveyor system running with the shiploader fixed in one position to continue exporting coal. Stage 2 was the design of a new tripper to compensate for the lower wharf conveyor and included levelling the wharf conveyor. HEB Construction was awarded the contract to re-build the wharf and SCE was the successful tenderer for the steelwork. Work consisted of the fabrication and installation of 270m of shiploader support beams, bracing and pile caps. The fabrication work included 610/530 UBs welded toe-to-toe, using our high power SAW welding plant and welding boom, ie. more than 2kms of welding. We achieved the required penetration of the 19mm flanges with a single pass.

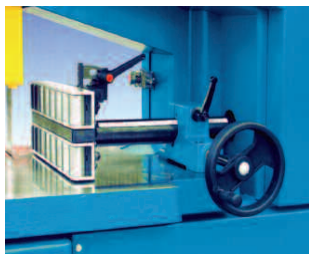
Both the innovative welding and installation methodology ensured that SCE was able to stand in front of the other tenderers.

SCE Project Manager, Paul Scott, is leading the team to meet HEB and Lyttelton Port target dates.

## Stenner bandsaw sales "go through the roof!"

 There's been a big market resurgence for Stenner resaws due to a need for flexibility and for reliable machines.

The SCE Group has been supplying Stenner machines to the Australian timber industry for many years.



They are easy to install and require no pit, needing only power and air supply to be ready for production. All Stenner band resaws feature pneumatic saw straining and

pressure saw guides, allowing the manufacturer to produce sawn products to a depth of 300mm at high speed with a minimum kerf. Other features are angle cutting to a 35° maximum, an interlock CE certified safety system and the ability to run disposable blades.

The range covers single stand-alone vertical machines to the MHS multi-head horizontal resaw for production of multiple boards in a single run. Stenner have supplied over 800 of these machines world-wide – they can also be used as a resaw in sawmill applications.

"We have recently supplied machines for a variety of resaw applications," said Scott Dixon, SCE Product Manager. "The pallet industry in particular are finding Stenner resaws are providing real flexibility, as they are now able to successfully turn low quality timber into usable product."

Stenner resaws are available from Auckland, Brisbane and Melbourne for immediate delivery.

## SCE gets to grips with the Joulin Vacuum Stacker

 The SCE Group has formed an alliance with Joulin, a European company who specialise in vacuum handling technology. Joulin is well-known throughout the world for supplying vacuum grippers to the timber industry.



Stacking, de-stacking, palletising, de-palletising, sticking, de-sticking and sorting robotics are all possible with Joulin grippers. The systems require relatively low power consumption and have full or semi-automatic options.

The vacuum heads technology causes the gripper valves to close when not fixed to a surface. This allows for random length pick-up and varied pack width stacking or de-stacking.

"SCE will be an ideal fit with the Joulin automatic handling system, which can be designed to suit many timber industry projects," said Scott Dixon, SCE Product Manager. "We can feed moulders and resaws, stack from machines, de-stack, single piece stack - the options are many and varied." Many European companies are now using Joulin systems for the dual purpose option of feeding and stacking. They eliminate the need for additional unscramblers and tilt hoists for unfiletted pack feeding or destacking.

SCE's alliance with Joulin also complements the Group's ability to supply complete turnkey solutions, with in-house manufacturing and electrical engineering available for handling systems to either existing lines or new installations.

## New Leadermac Hypermac is a real winner with Cedar West

 Cedar West in Perth Western Australia recently purchased and installed a new LMC 823 Hypermac moulder.

The moulder is a Hypermac Series eight-head machine with new advanced leading-edge technology including smart-set controls and networks control systems.



Cedar West are leaders in the supply of cedar joinery, mouldings, panelling and rough-sawn cedar to the building industry in Western Australia. They decided, after much discussion with Daniel Coombes, SCE's technical sales representative to invest in the Hypermac, which has subsequently added value and efficiency to the whole operation at Cedar West, with dramatically-reduced pattern changeover times and increased production capability.

"Cedar West had the opportunity to purchase a competitive machine from another manufacturer, but the pricing and excellent support available from SCE, coupled with the many features offered by the Hypermac, far outweighed the other offer," said Stewart Arnold, proprietor of Cedar West.

"SCE not only delivered the machine on time and supplied technicians to install and programme, but provided expert training to ensure that our cedar products were produced to the high standards we were expecting ...and indeed they were!"



THE SOUTHERN CROSS ENGINEERING GROUP





## New sling sorting and stacking system for CraigPine



A 30-bay sling sorting & stacking system is currently being manufactured by SCE for the CraigPine sawmill at Winton.

The new system is designed to replace CraigPine's existing manual sorting and stacking system in the dry mill operation, which was installed at the mill in 2008.

It consists of a pack breakdown hoist with a bearer and stick collection system. Following the tilt hoist are landing decks feeding to a new SCE-designed pneumatic tong feed lug loader. The loader is capable of feeding boards at up to 200 pieces per minute but, in this application, a maximum of 100 per minute is adequate. The lug loader feeds to a 3-station sharkfin grading deck and then on up into the 30-bay sling sorter. "The 30 bays of slings have a very gentle let-down onto the timber, which means less damage and broken boards," said SCE Marketing Executive Kevin Sibley.



The stacker is of standard SCE manufacture and features an adjustable stick placer. The placer design allows it to handle sticks from 40 x 20mm down to 30 x 10mm - it will also place cardboard at 20mm x 2mm.

Stacked packs are transferred onto a pack outfeed rollcase and then to an automatic strapping station. After the packs are strapped, they pass under a wrapping station where they are wrapped for export. Packs then transfer onto a side discharge wide rollcase to be accumulated and then loaded into containers for export.

Installation of the sling sorting and stacking system is due to be completed in late 2011.

## Martin – he's our electrical man!



If it's an electrical technician you want, then you definitely need to talk to Martin Evans!



Martin started working as an electrical technician for the SCE Group in 2007 after being involved in the electrical industry for over 11 years.

This involved time with Scott Technology, EPC Automation and Millenium Electrical as a controls engineer and a design/automation technician.

Typical responsibilities at SCE for Martin involve support for the electrical engineer on project work, which includes pricing, electrical schematic generation and PLC/SCADA/HMI engineering and commissioning as well as after-sales support for clients with SCE designed, manufactured and installed equipment.

"I also offer back-up support to clients with Woodeye scanners and System TM equipment," said Martin. "This can include remote telephone and internet trouble-shooting, procurement of spare parts and scheduled service visits."

He is also involved in on-site training in the operation and maintenance of machinery.

## SCE represents Woodeye scanners in Australasia



The SCE Group has been awarded exclusive representation for Woodeye scanner products throughout Australia and New Zealand.



For the last 20 years, Swedish based company Innovativ Vision AB has been an industry leader in the design and manufacture of wood scanning machinery. The company has its roots in internationally successful research carried out since the 1970's into computerised image processing. The current product series are based on this research and incorporate the latest technology.

Woodeye develop, manufacture and market scanners for sorting and grading timber for both the dry mill and green mill industries. Customers also include manufacturers of flooring and parquet, gluelam products, windows and furniture.

The scanner range is diverse and covers a wide spectrum of industry applications. These include Woodeye crosscut, rip, sorter and grader scanners, solutions for parquet and flooring and the newly-introduced Woodeye 5, the next generation of scanners.

The Woodeye range controls and measures timber production, leading to increased output, even quality, cost reduction and an improved yield.

The SCE Group have formed an alliance with Woodeye and are exclusively marketing their scanners throughout Australasia. "We are able to supply complete Woodeye scanning solutions to the timber industry and can provide support on deliveries, installations, commissioning and after-sales service," said Daniel Coombes, SCE's Technical Sales Representative.

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