

Industry invests to keep at cutting edge

It's easy to tell those emerging as the major players in Australian steel fabrication and processing – they're the ones who have defied the economic doomsayers to invest heavily in new plant, equipment and processes recently. *Steel Australia* editor ALAN MARSHALL gives a glimpse of some exciting developments on the 'shop floor'.



The ASI is currently updating its online database as part of migrating to the Institute's new website planned to go live in early 2011 that will consolidate the existing Fabricator's Matrix and Industry Directory into one handy resource.

The update will be valuable as many of the ASI's more prominent members have been busy upgrading plant and equipment, demonstrating the courage of their convictions and faith in the Australian steel sector.

The sort of 'build it and they will come' mindset conveyed by owners and managers is already paying dividends not only in starting to attract heavier and more challenging work, but also in up-skilling and up-staffing the workshop.

Plant and people

For **Steve Smith** of ATB Morton, the real value in upgrading technology on the floor lies in keeping its labour force up to scratch.

"Technology is a part of everyday life so employees are apt to work with computers, so the aim is to provide more challenging tasks to employees and leave manual lower skill tasks with the machinery," Mr Smith said.

"This lowers cost of production based on the ability of machinery to process higher volumes of work."

The Group recently adopted a new computer numerical controlled (CNC) beam line, punch and shear unit and integrated shot blasting facility at its major steel fabrication plant in Newcastle.

He said that the upgrade allows the company to expand into more precision steel processing, gain a higher level of certainty with 'cut and hole' tolerance to consistently meet clients' specifications, handle flat and angle bar processing with greater accuracy and shot blast multiple sections of steel in-house.

Since the new machinery arrived, the company's workshop output capability has more than doubled to about approximately 12,000 tonnes a year.

"This capacity provides us opportunity to increase our own volumes whilst being able to assist other fabricators to win work based on them knowing they can outsource the steel processing to ourselves whilst they use their capacity to fabricate to their clients' requirements."

CNC machinery has also played a major part in Fitti Steel Fabrication in Western Australia doubling its throughput.

Fitti's General Manager, **John Fitti** said the company has installed two pieces of CNC equipment over the past year, a sawing and drilling line and a robotic thermal coping line.

The new equipment's main functions are cutting (sawing) to length, drilling of holes and thermal coping of any notches to structural steel beams, columns, channels and tubular sections.

"All these tasks are labour-intensive when performed manually, but the use of the automated CNC equipment has significantly reduced steel processing times due to less handling, manual measuring and manual marking," Mr Fitti said.

"The new equipment allows us to improve our efficiency, increase our capacity, improve our turnaround time and maximise our competitiveness in the market.

"We believe we can even triple our throughput given the right market conditions and we have increased our workforce also to cope with the more expedient processing of steel sections."

More floor space

The upgrades have also necessitated some members opening up whole new facilities, especially involving South Australian-based fabricator members with Samaras Structural Engineers, Manuele Engineers and Ahrens the most prominent, all of which has increased capacity markedly.

Samaras has been going great guns since relocating to their larger new premises over the past year, most recently installing a beam assembly welding and straightening machine (BAWSM) and pipe coaster.

Samaras Business Development Manager, **Jeremy Owen** said the investment further allows the company to utilise in-house 3D Modelling software, knowledge and previous project experience to offer tailored solutions including non-standard beams, overseas size equivalent beams, tee beams, tapered beams, castellated beams, asymmetric beams with flange thickness variations, off-centre web alignment beams and many more variations.



Samaras' Beam Assembly Welding and Straightening Machine.

"The BAWSM allows us to manufacture and supply custom and standard welded beams and columns to 30-metre lengths and over at greatly reduced lead times, and supply steel girders with purpose-designed welding details specific to fatigue or high stress situations," he said.

"The pipe coaster bolsters our ability to help clients, suppliers, drafters, engineers, designers and consultants with processed tubular steel products, designed and manufactured specifically to project requirements."

He said it can process 50 to 600mm outside diameter CHS, RHS and SHS sections via CNC plasma or oxy processes.

"It significantly reduces welding preparation and consumables by up to 60 percent, can produce a myriad of cutting options like crank joint, slot, straight edge bevel, pad hole, multiple joint edge, lobster tail, V-shape, T-joint and multiple joint edges," he said.

Ahrens moved into its new steel manufacturing facility just north of Gawler in mid 2009 borrowing smarts from comparable operations overseas to include Best Practice equipment and processes.

The investment included a bigger workshop configuration, a larger storage area which can hold up to 2000 tonnes of steel, a custom-engineered building (CEB) line and a shot blast and paint line.



The monorail that services the advanced new paint line at Ahrens.

The workshop area features an overhead crane for each welder and a side-lift forklift has also been introduced to eliminate turning of long beams in the workshop. On the CEB line, flange materials are safely handled by electromagnetic grab cranes and steel plates are handled by vacuum suction cup lifting attachments.

The technologically advanced shot blast and semi-automated paint line for structural steel members is serviced by a monorail system which carries the beams in single file. Steel beams pass through a 16-wheel 'Wheelabrator' before being painted in water-wall paint booths. From here, the painted steel is carried through a flash-off tunnel and finally through a gas-fired infrared oven to cure the paint before the steel is unloaded from the monorail for transport.

"Our new facility includes one of the most modern shot blast and paint line facilities for structural steel in Australia that enables us to provide high quality, in-house painting under very controlled conditions," Managing Director, **Stefan Ahrens** said.

The CEB has a tapered web welded beam line which gives Ahrens the ability to undertake CEB building design for more cost-effective, large-span buildings.

"The CEB capability allows us to provide highly competitive prices on large warehouses and other industrial buildings," Mr Ahrens said.

"As a result of our recent acquisition of MPH Rural in Queensland and NSW, and Mahon's Asset Management in Newman WA, we have also extended our capacity and capabilities interstate, particularly in the delivery of products and services to the mining and agricultural industries."

Wider coverage

Opportunities in SA convinced ASI member Webforge to open a new branch recently at Wingfield in Adelaide during early 2010, complementing the company's other facilities in most Australian states.

Whilst bespoke fabricated requirements have initially been serviced out of other Webforge manufacturing facilities on a project-by-project basis, Webforge Managing Director, **Paul Gee** said the business is well advanced to have in-house fabrication facilities in Adelaide by end of 2010, employing additional welding/fabrication capability and additional sales representation in the market.

"The business has grown rapidly on the back of same or next day delivery on stock components and meeting market requirements on lead times for all fabricated grating and hand railing products," he said.

And despite concerns over manufacturing dwindling in the traditional strong Victorian industrial sector, a number of ASI members have also been actively expanding in that State.

For instance, ASI fabricator, Stilcon recently added an extension to its existing 8000sqm facility adding 1200sqm more plant space providing 15 percent more working room, freeing up enough space in the existing facility for an additional four boilermakers to potentially increase the company's capacity by 20 percent.

Stilcon General Manager, **Laszlo Puzsar** said that all plate processing, primarily on a new Farley Laserlab Magician Plasma cutting machine and small engineering is now done in the new extension and will also house section bending for small member sizes and a larger press to reduce the reliance on other small engineering workshops.

"Speed and quantity of plate processing will be further increased and the potential for additional tradesman and boilermakers will further increase our capacity and reduce lead times," Mr Puzsar said.

Page Steel Fabrications recently moved to new premises in Melbourne installing an array of new technologies in the process that has almost doubled the company's potential work capacity.

"The investment is a huge leap of faith as the recent downturn in the economy has made it hard for the investments to work at full capacity, but as the economy starts to improve we expect the investment should see larger volumes of steel being produced," said Page Steel Fabrications Director, **Chris Piacentini**.

"Over the past few years we have installed automated fabrication equipment that abrasive blasts, cuts, drills, marks, copes and cambers steel."

He said the automated facility basically does the fabrication apart from placing the parts and welding them.

The company also developed its own proprietary full bar-coding tracking system called *Steeltrack* that records fabrication and QA status, employees' names and heat numbers against specific items.

"The technology investment allows us to move steel through the workshop quicker and safer," he said. "It also enables higher accuracy and much tighter control on the location of each member in its journey through the workshop to delivery onsite."

Page Steel's most recent upgrade has been installation of a new Peddinghaus ABCM-1250 Coper that combines roller feed accuracy with a multi-torch thermal cutting system allowing the company to perform automated complex structural burning and coping. The machine completes the picture for Page Steel to move into multi-level steel construction.

Faith in future

While many in NSW have been operating cautiously, ASI fabricator Nepean Engineering has invested more than \$10 million in the past 12 months on new equipment at its 40,000sqm Narellan facility.

The company's structural steel fabrication shop was extended 40 percent with the additional space providing much larger work and loading areas.

General Manager Structural Steel, **Col Poulter** believes the real benefit comes from the efficiency derived from a more seamless production flow where products go straight from its new Daito Seiki beam profiling line or workstations to the newly installed blast chamber, and then onto the paint shop or galvanising plant.



Inside Nepean Engineering's spacious modern plant.

"This investment shows the fabricator's commitment to the future of Australian engineering and manufacturing," Mr Poulter said.

"Many critics have considered Australian manufacturing to be on its last legs, but our customers see great value in Australian-made and delivered solutions."

A key feature of Nepean's revamped fabrication operations has been the commissioning of the beam profiling line that enables it to cut using a robot oxy or plasma cutter, saw, drill (top, slots and side holes) as well as cope to produce beams in a more efficient way. With proper programming the new line can produce a beam in 10 minutes compared with the traditional production of the same beam by a boilermaker which could take up to four hours.

The beams can also be galvanised by Nepean Group member company, Graham Group.

Nepean Engineering has witnessed an increasing demand for architectural curved beams which it can now handle with its new in-house designed and built beam cambering machine. In addition, Graham Group recently installed new plate plasma cutting and custom beam fabricating capability which will complement Nepean Engineering's overall structural steel offering to its customers.

The company also added a heavy machine shop which was completed this year and it houses one of the largest CNC horizontal floor borers installed in Australia. It has a 12m 'X' travel, 4m 'Y' travel, 2m 'Z' travel, and $\phi 160$ Quill 1.1m travel in addition to ram travel of 1.1m, two fixed tables and a 40-tonne capacity rotary table. With it, Nepean can machine larger engineering jobs in one piece, such as rope drums for tower mast cranes or mine winches and chassis for light armoured vehicles.

Nepean Engineering also invested in a new large capacity lathe (1900mm swing on bed/1550mm on saddle x 5700mm between centres) which has both turning and milling capabilities.

"Investments like these allow Nepean to offer its customers shorter lead times, faster production and higher quality product," Mr Poulter said.

Steel Australia is always interested in hearing about new technologies and facilities being adopted by its members that significantly increase capacity and capability. Telephone the Editor on 02 9931 6606 or Email alanm@steel.org.au.