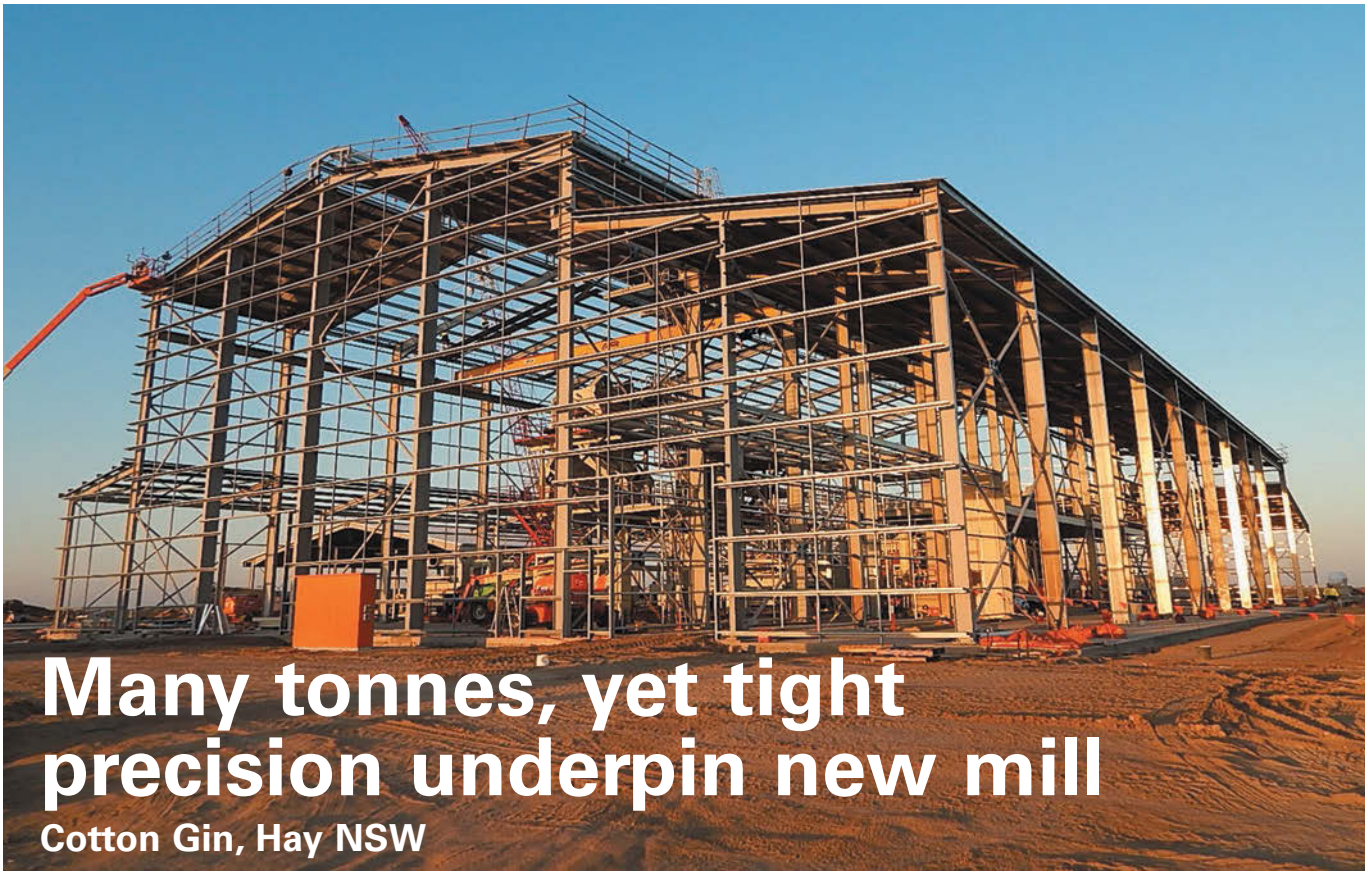


Many tonnes, yet tight precision underpin new mill

Cotton Gin, Hay NSW

The agricultural development project managed by ASI fabricator, Morton Steel has met the twin challenge of supplying Australian steelwork to develop one of the world's largest cotton processing facilities and the biggest in the Riverina region of south western NSW to tight tolerances for fit.

The new facility encompasses the building containing the cotton gin equipment to separate the seed and cotton fibre and separate buildings to manage bales and seeds calling for about 850 tonnes of steelwork as well as 20,000sqm worth of roof and wall sheeting.

On the strength of its client relationship from work on two previous cotton gins, a large seed shed and other project works dating back to 1996, Queensland-based Morton Steel landed the contact not only for the buildings themselves, but also for logistical facilities requiring deft plate bending and moveable components designed to tight tolerances.

Morton Steel acted as design and construct project manager responsible for all detailed design works, fabrication, sandblasting and coating of steelwork, freight to site, all plant and equipment hire, all required excavation and concrete works for bored footings and stub walls and erection onsite for which it utilised local tradespeople where available. Some erection cranes were supplied from Brisbane with others by NSW-based companies. A locally-based design engineer was also sub-contracted.

The project itself responds to record cotton yields in the Murrumbidgee valley over recent years which have recently seen a number of other cotton gin facilities established.

The investment by Auscott in the new facility stakes further confidence in the region with its land and water resources presenting great potential for the growth of the cotton industry, according to **Daniel Draheim** from the Australian agricultural group. It also runs ginning operations in the Macquarie, Namoi and Gwydir valleys and says once complete its Hay gin will be able to process 2000 cotton bales a day.

All steel fabrication and detailing for the new buildings were performed by ASI member companies and BlueScope steel used throughout.

The gin processing facility itself has a 4950sqm footprint incorporating an overhead eight-tonne capacity gantry crane spanning the building's 30 metre width that required temporarily removing part of the roof structure to install with less than 6.5mm margin for deviation.

The steelwork for this building also includes an internal fire rated electrical switch room, stairways, guardrails, roller doors and elevated access platforms, process cyclones and associated screw conveyor and ducting system transfer units.

With each transfer unit serving a specific function, the challenge of integrating each was overcome by all parties working closely together. The large cone sections and process cyclone units of sheets of 3mm thick 300 grade couldn't be rolled as one piece meaning precision bending and welding of smaller plate lengths.

Most of the steel detailing for the project was carried out by Steelcad Drafting. Managing Director, **Clayton Roxborough** explained that its scope of work included structural and mechanical steelwork in the gin building, clash detection, resolution of design and material fabrication issues for the complicated process cyclones and associated screw conveyor and ducting. In addition, Steelcad provided mechanical interface checks, door schedules, rainwater goods and cladding arrangements.

"During the course of 3D modelling and shop detail drafting we also handled several significant changes to design and additions to our scope of work without major impacts to the project schedule," Mr Roxborough said.

"We were also involved in checking clearance envelopes for the gantry crane and personnel access requirements.

"Detailing began prior to the completion of design, allowing our team to liaise directly with the builder and designers to provide assistance by expediting solutions to structural steel interfaces with mechanical process equipment and civil works."

Mr Roxborough went on to say that "having a client that allowed all parties to work together to resolve documentation and clash detection issues was a significant factor in keeping our delivery program tight and mitigating the numerous delays that would otherwise have had a severe impact on the fabrication and procurement schedules".

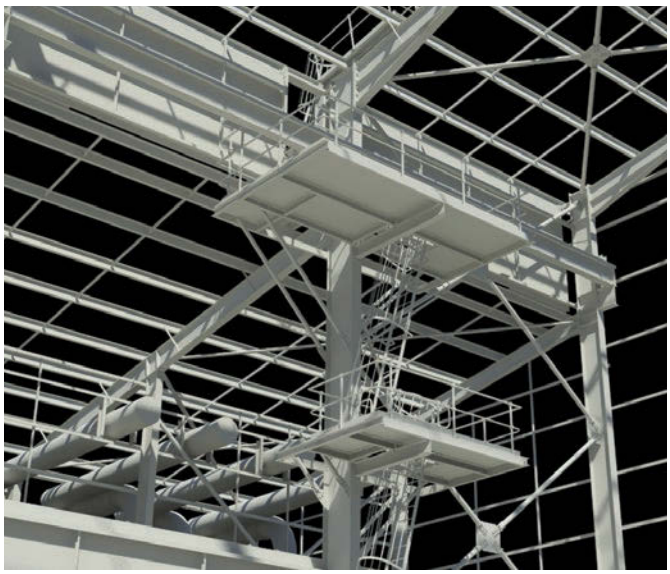
Peter Hempsall of Hempsall Steel Detailing which assisted with some of the portal frame buildings' steelwork said that working together with Morton Steel as the design and construct manager for the project made for a very successful final outcome.

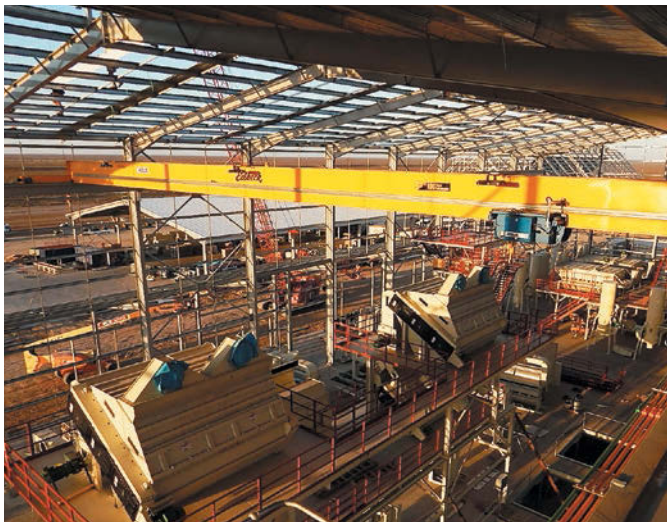
"I was involved in the steel detailing of the seed shed, the bale storage shed and smaller trash house which all used simple type connections throughout aiding the detailing and erection," he said.

The seed shed itself is an A-Frame designed building containing a complex stair arrangement to the apex platform and screw conveyor.

The fully covered seed storage shed is built on structural pier foundations incorporating a 1.8 metre pit with concrete stub walls housing an underground aeration system with structural steelwork for the above ground superstructure supporting wall and roof cladding, a central roof screw conveyor with walkway and external access stairway.

Lysaght Bondek® composite steel decking was used for suspended slabs as formwork for basement steelwork above the underground facility.





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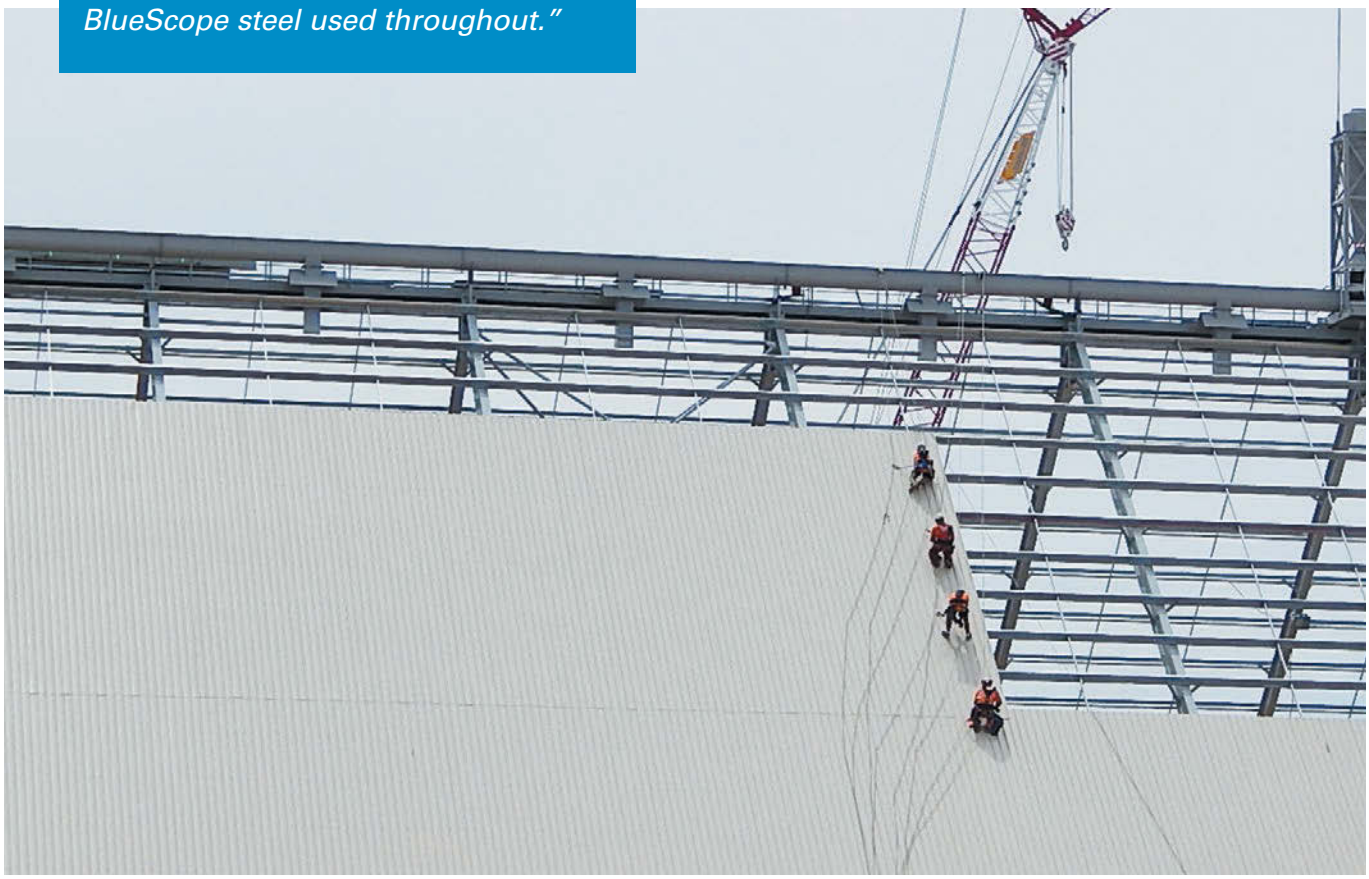
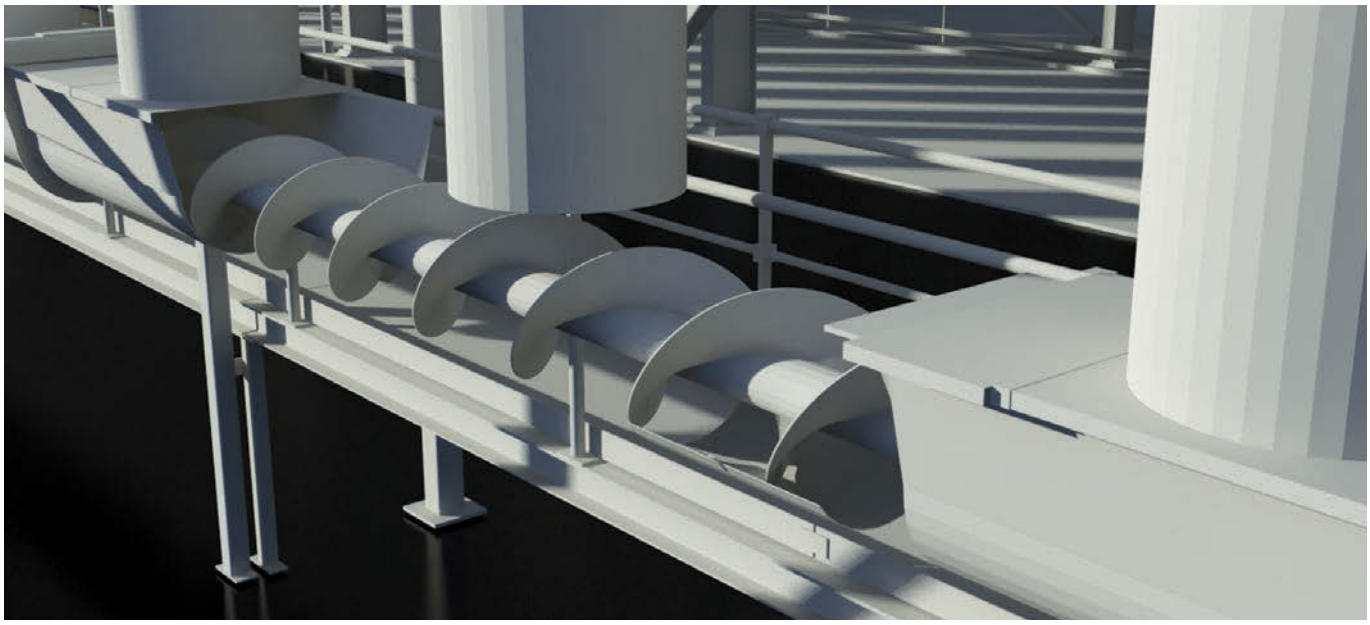




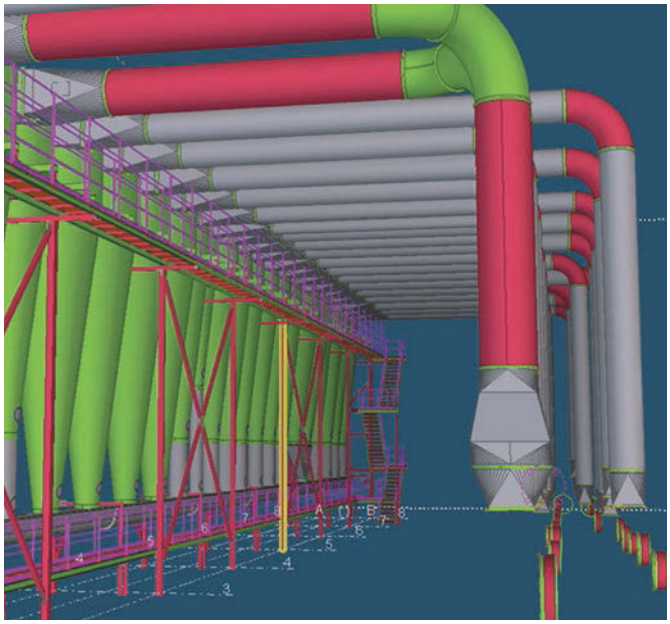
According to Morton Steel Business Development Manager, **Paul Montague** its 45 degree pitched roof presented the biggest challenge for the onsite crew to install.

He said that orienting the 762mm by 12 metre roofing sheets to the designed angle imposed heavy wind loads that did not permit them to be installed the conventional way, requiring rather a four man abseiling team to place whilst applying their combined weight on each sheet to counter wind forces on the open rural site.

"The project was undertaken using our ISO 9001 SAI Global Certification as the quality standard which ensured we met our customers' requirements and achieved our continual improvement objectives," Mr Montague said.

"Close liaison with our civil contractors also ensured the accurate placement of concrete and all hold down bolt assemblies.

"Our adherence to ISO 9001 certification requirements minimised erection issues onsite with only 10 holes out of 10,000 on the total project misaligned."



*3D renderings: Steelcad Drafting

Project Team:

Developer and Owner: Auscott

Project Management: Morton Steel

Design Engineering: Matthew Kelley Engineers, Metrotech Consulting Engineers (David Jones)

ASI Fabricator: Morton Steel

Roll formed Roof Cladding: Stratco Australia

Roll formed Purlins/Girts: Stratco Australia, BlueScope Lysaght

Protective Coatings: PPG Industries

ASI Steel Detailers: Hempsall Steel Detailing and Steelcad Drafting

ASI Steel Distributor: BlueScope Distribution

ASI Steel Manufacturer: BlueScope