

TEKLA BIM AWARDS
Australia and New Zealand

2018





Hilton Foods Australia Meat Processing & Distribution Facility QLD

About Tungsten Structures:

Tungsten Structures aspires to be the Australian building industry's number one for value adding structural engineering. Our Managing Director, Vince Williams, established the company in 2015 and aims to further build upon his reputation for keeping promises, and providing reliability and certainty to all of his client's projects. Our main focus is to save our clients maximum construction dollars through contemporary, investigative, economical designs and highly innovative, engaging, and interactive documentation.

We aim to provide a unique service offering to that of the robotic and generic one size fits all solution currently offered in the marketplace. We are fresh, our solutions are always considered, and we are fun to do business with.

Tungsten Structures work together with design and construct (D&C) builders and D&C sub-contractors, within exclusive relationships, to provide significant value to the lives and projects of developers, owner occupiers, and real estate investment trusts.

We are recognised industry experts, specifically, for providing efficient and data rich industrial and retail sector structural engineering designs.

About the project:

New cold storage meat processing and processing facility for Hilton Foods Australia, in partnership with Logos Property. The building stands up to 20m high and spans 25,000sqm on ground with a further 15,000sqm suspended internal floors. The facility is split into five distinctive operational areas being production, warehousing, crate washing, administration and servicing. The project is valued at around \$120M, split approximately a third each between the base building, refrigeration and services and finally the intricate fitout including highly advanced robotics and material handling equipment and conveyors.



The project commenced design in around April 2017, with the first construction issued drawings being released in December 2017. Structural site works commenced December 2017 and are ongoing today. The structure is perhaps around 70% complete, with the builder due for a handover to the client in February 2019. The fitout works will proceed until October 2019 when the operation of the facility will go live.

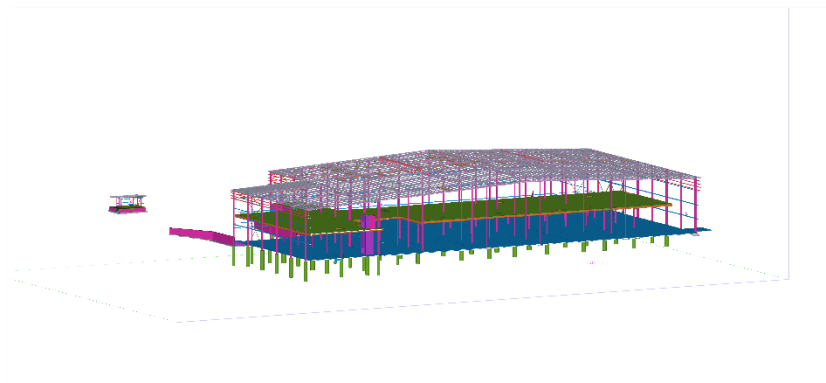
Tungsten Structures are the principal structural engineer on the project and are responsible for the design, documentation, certification and

construction support of all structural elements. It is the largest project that Tungsten Structures have been awarded with an approximate price tag of \$120M. The project includes many mixed structural engineering materials and elements that required us to have a very well rounded and sound knowledge and expertise base. The mix included concrete bored piles, concrete pad and strip footings, conventionally reinforced and steel fibre reinforced slabs on ground, suspended composite metal sheet formed concrete slabs supported on structural steel beams, suspended steel floors with cold formed rolled joists, structural steel roof and wall framing with cold rolled purlins and girts. The walls are made up of a mix of concrete tilt panels, EPS cold room insulated sandwich panels and masonry blockwork.

Challenges and success factors:

The sheer size and scale of the project was a major challenge. It contains around 1500 tonnes of structural steelwork alone. The bulk of the design and documentation was completed by just two engineers who also carried out their own modelling and drafting. One of the engineer's involved in the project was new to Tekla Structures and the other had only 2 years prior experience.

The structure of the project was 100% modelled and documented in Tekla Structures. We decided early on to adopt the cloud based Model Sharing feature of Tekla to successfully share and coordinate data. There were quite a few hiccups learning the most efficient manner as to when and how to read in and write out, with multiple accidental drawing data deletions early on during our process before we had it down pat and humming. However we mastered the work flow and following hundreds of individual read in and write out processes, we successfully delivered the model and documents on program.



BIM, Tekla Software and Trimble – benefits:

I've mentioned that Model Sharing enlisted above. The other major benefit for us was the ability to deliver an ifc format model file to our client, the consultant team, and the steel detailers.

Coordination of packages was made all the more easier with the availability of our model. Our client actually used our structural Tekla model as the basis for their D&C services sub-contractors to work with to produce their service models, as the architect was actually documenting in 2D CAD.

During steel detailer shop drawing reviews, we would receive their ifc format file and load into Tekla BIMsight. We would then perform the entire review in 3D. We added any comments in a notes file and sent these amalgamated notes back to the detailer for their action within a BCF file format. This process continued back and forth until we were satisfied that all comments were actioned. The steel construction and rigging on site has been flawless to date with a perfect fit.

Project data:

\$120M. 25000sqm ground floor. 15000sqm first floor.

1500 tonnes of structural steelwork

20m highest point

185m long x 135m wide