

155 Queen Street Mall Facade

This project was an entry in the 2016 LSAA Design Awards (0481)

Entrant: Tensys Engineers Pty Ltd (Engineer)

Location: 155 Queen St Mall, Brisbane. **Completed:** 2015 **Client:** ISPT Super Property

Team: studio 505 / JWA, Tensys Engineers, Tensys (Façade), UAP Company, Broad Construction

Application

The implementation of form and function. Creation of shade function with a sculptural form

Description

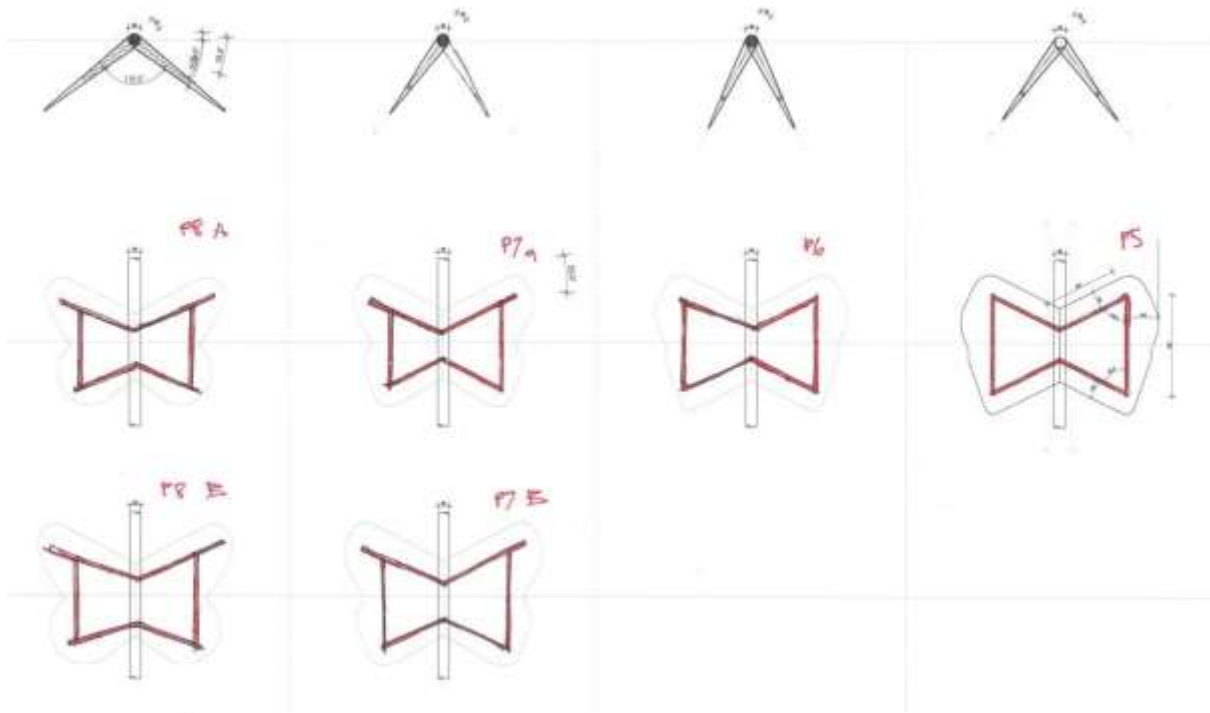
The proposed upper podium façade to 155 Queen St has been conceived as a standalone design aimed at providing a distinct and individual urban character to this new dynamic development. The materiality and geometry employed will endow the new façade with a subtle relationship to the adjacent Wintergarden whilst remaining a clearly unique and individual addition to the streetscape.

Respect and sensitivity towards the adjacent Grand Regent heritage building façade has been in the forefront of the design and disposition of the new art screen. The art screen is at its most open and transparent at this northern end; the supporting structure has a feathered edge to avoid a vertical return and the cladding has been folded open to allow light and oblique views through the art screen to the adjacent Grand Regent heritage building facade.

The proposed new shading screen to the upper office podium levels with its three dimensional geometry will create a façade animated by the interplay of light and shadows during the day, suitable and representative of the busy mall space below. The new facade's transparency will allow views both from the Queen st mall through the facade to the office activities behind and out of the office levels to the mall and beyond. This level of transparency is fitting for a public realm, as is the art screen which will demonstrate that delivering sustainable facades need not be at the expense of urban character.

Design Brief

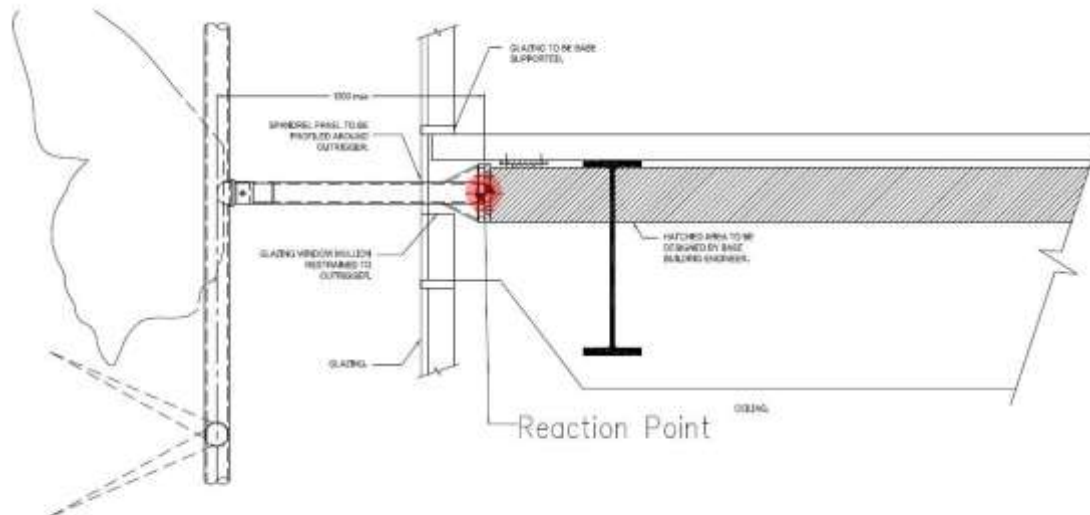
In order to maintain the minimalistic nature of the façade, the butterfly skin and support need to be integrated together to act as one. Integration of asymmetric openings within the butterfly shrouds were another challenge for the structural system.



Structural Systems

As mentioned previously the minimalistic nature of the butterflies skin and support requires analysis of not only the support system but integrating the façade panels in numerous finite element analysis and simulation.

The support for the various butterflies (off a single pole) was part of the structural challenge to create an illusion of floating beyond the glass envelope of the building.



Materials

Structural steel G350 support steel (galvanized and painted). Aluminium anodized butterfly shrouds

Fabrication

The fabrication works were carried out in China and flat packed for delivery to Australia.

As part of post tender process, several connection splices were modified to ensure fit into a 20 ft container.

Collaboration, Construction and Maintenance

Collaboration with specialist contractor and fabricator – interfacing both with manufacturing facilities in China and site in Brisbane.

At the same time, changes to the perforation in the butterfly shrouds were only finalized by s505 at the last minute and required finite element analysis verification.

Costs

Total project in the order of \$800,000