

# CAPABILITY STATEMENT

CONSTRUCTION ENGINEERING





## OVERVIEW

Peritas have a long-standing history with Construction Engineering across Australia. Over the past 10 years, we have been involved in some of WA's biggest projects with construction values up to \$1.6 billion. Construction engineering is a valuable element to our business and we are renowned for our focus on **safety, innovative designs, quality of service and delivery**. We deliver high quality detailed engineering solutions to difficult construction projects across a variety of industries.

SKYBRIDGE, PERTH AIRPORT WA

## RECENT PROJECTS:

### CONSTRUCTION ENGINEERING

- TONKIN GAP PROJECT, WA
- AUBIN GROVE TRAIN STATION, WA
- MANDURAH TRAFFIC BRIDGE, WA
- SKYBRIDGE, PERTH AIRPORT WA - **MBA AWARD WINNER 2020**
- MITCHELL FWY PEDESTRIAN BRIDGE, WA
- MATAGARUP BRIDGE TUNING DEVICE, BURSWOOD, WA
- AUSTAL SHIPS SLIPWAY UPGRADE, HENDERSON WA
- RIO TINTO MESA A SMP MODULES
- BINDOON SNIPER TOWER, BINDOON WA
- BHP LINER TRANSPORT FRAMES
- ELIZABETH QUAY STAGE 1 & 2, PERTH, WA

### TEMPORARY WORKS INFRASTRUCTURE

- FORRESTFIELD AIRPORT LINK (D-WALLS), WA
- SEAWATER INTAKE STRUCTURE, BARROW ISLAND
- BUSSELTON JETTY, WA
- MAIN ROADS RURAL BRIDGE UPGRADES, WA
- RUSSEL ROAD BRIDGE UPGRADE, WA
- KAREL AVE, JANDAKOT WA
- ROE HIGHWAY, KALAMUNDA INTERCHANGE, WA

### DEMOLITION

- OLD MANDURAH TRAFFIC BRIDGE, WA
- WINDSOR BRIDGE DEMOLITION, NSW
- KAREL AVE BRIDGE, JANDAKOT WA
- HAMILTON ST BRIDGE, SUBIACO WA



AUBIN GROVE TRAIN STATION MODULE LIFT



MANDURAH TRAFFIC BRIDGE, WA



### CONSTRUCTION ENGINEERING

- Construction methodology
- Heavy Lifting
- Articulated steel formwork for bridges
- Demolition
- Transport Frames
- Pre-tender input for project bids
- Condition Inspections

### TEMPORARY WORKS DESIGN

- Steel and Timber Formwork
- Propping
- Excavation Support
- Falsework
- Hoardings
- Crane Pads
- Third Party Design Review

AUSTAL SHIPS TROLLEY WEDGE, HENDERSON WA

## SPECIALIST COMPETENCIES

### Pre-Commencement Workshops

- Masterplanning,
- Risk workshops,
- Sustainability assessment,
- Accurate concept design,
- Constructability review.

### Drawings & Documentation

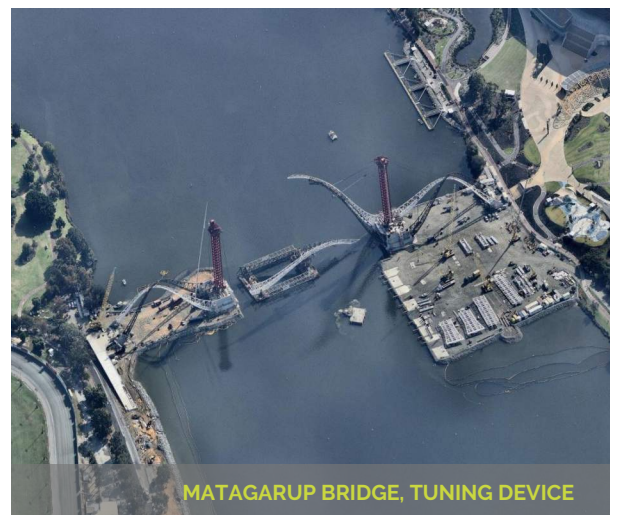
Our team are proficient users of BIM Modelling software (REVIT and TEKLA) where we adopt the most recent software versions.

### Construction Support & Contract Administration

We provide support throughout the construction phase of projects to ensure design compliance is achieved. As queries arise our experienced staff are always available to provide prompt responses to avoid delays on site.

### Specialist Analysis

Our capabilities include Finite Element Analysis and Dynamic Response Analysis to ensure we're able to model any structure. Having the latest software our engineers are able to provide cons effective design solutions for any structure.



MATAGARUP BRIDGE, TUNING DEVICE



WINDSOR BRIDGE DEMOLITION, NSW



### CLIENT

Georgiou Group | Perth Airport

### VALUE

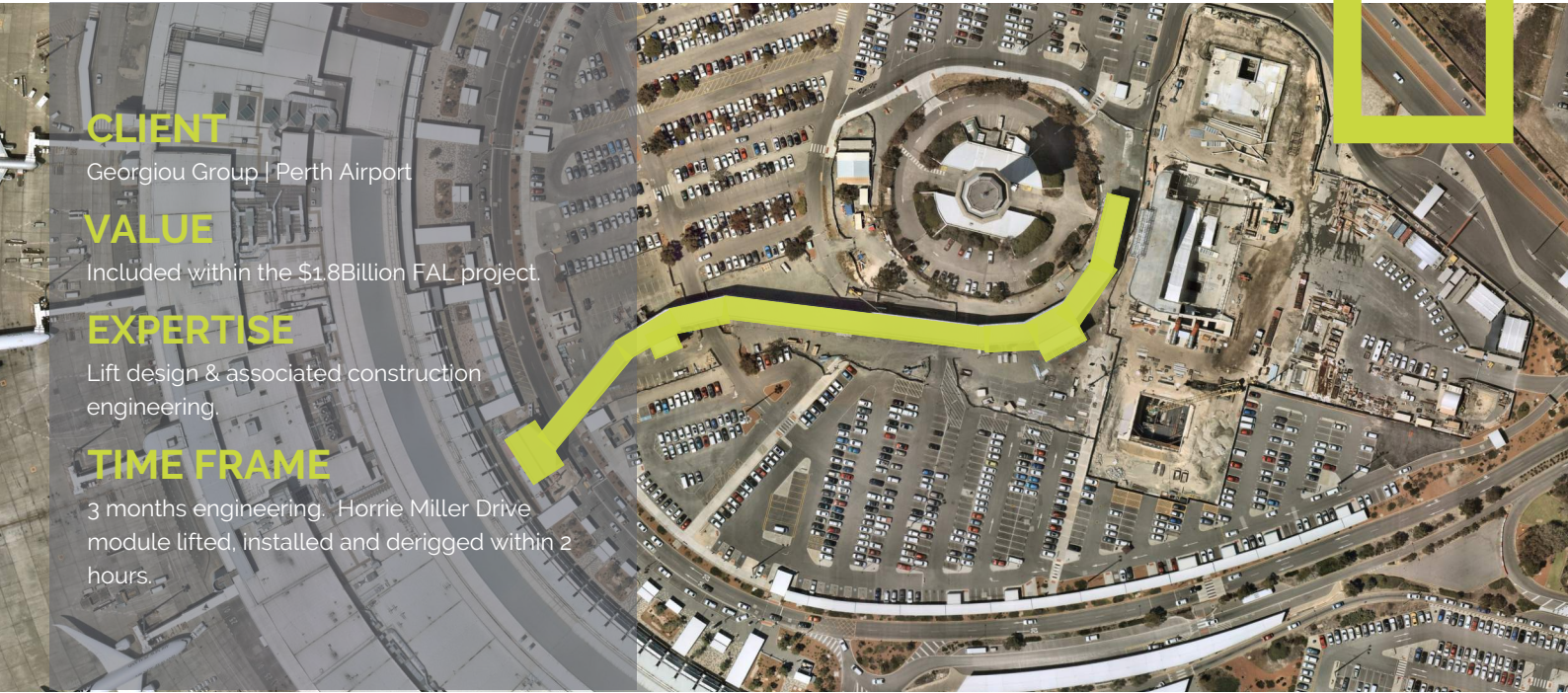
Included within the \$1.8Billion FAL project.

### EXPERTISE

Lift design & associated construction engineering.

### TIME FRAME

3 months engineering. Horrie Miller Drive module lifted, installed and derigged within 2 hours.



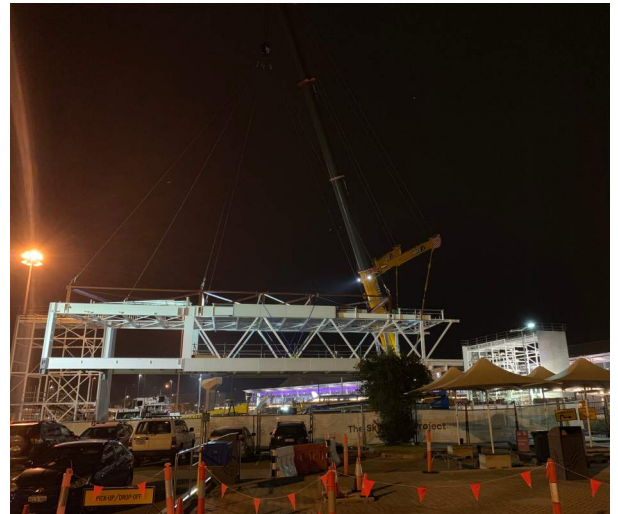
## SKYBRIDGE, PERTH AIRPORT WA

### PROJECT NOTES:

Peritas were engaged by Georgiou to undertake the lifting design for the new Perth Airport Skybridge, linking the Forrestfield Airport Train Station to the International Terminal. The Skybridge comprises 12 steel modules, the largest of which is 32m long, 8.5m wide and 83T and needed to be lifted in over Horrie Miller Drive during a limited shutdown window. Careful consideration of the lifting methodology was also required due to the ceiling heights on the lift imposed by the Airport due to its operations.

Peritas designed a series of lifting frames for the modules, based on both single and dual crane lift arrangements. The frames were slotted through the top chords of the skybridge truss with the lifting pins designed to be removed via lever from within the module. This enabled the Contractor to lift the modules with the roof cladding, gutters and capping installed, whilst factoring in the safety of the workers.

The performance of the modules during the staged installation was also considered, with temporary propping design provided where necessary to control deflection and maintain the intended performance requirements of the completed structure. This was completed in co-ordination with the Skybridge design engineers.







### CLIENT

BMD

### VALUE

\$3 million in approximated construction value.

### EXPERTISE

Lift design & associated construction engineering.

### TIME FRAME

2 months design.

## SCARBOROUGH BEACH ROAD PEDESTRIAN BRIDGE, WA

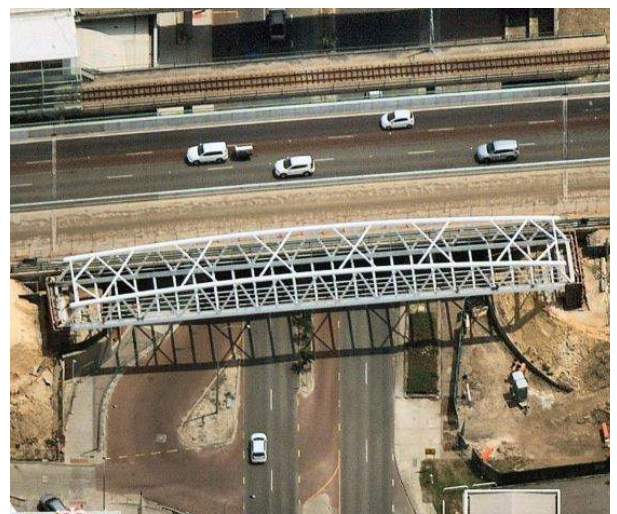
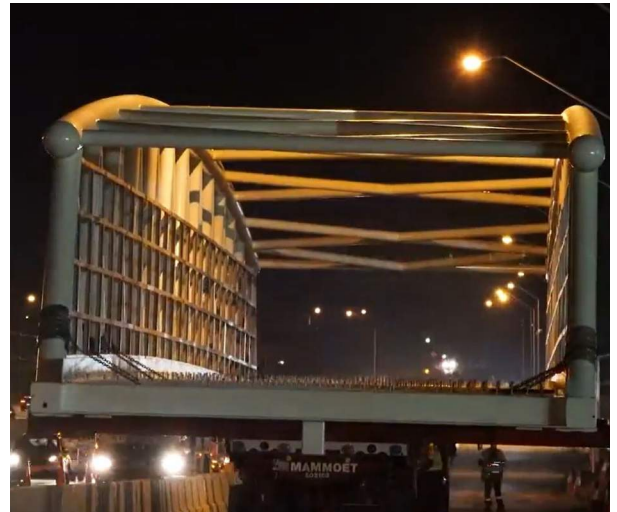
### PROJECT NOTES:

Peritas provided structural lifting design, documentation and construction support to BMD for the Mitchell Freeway Southbound Widening project.

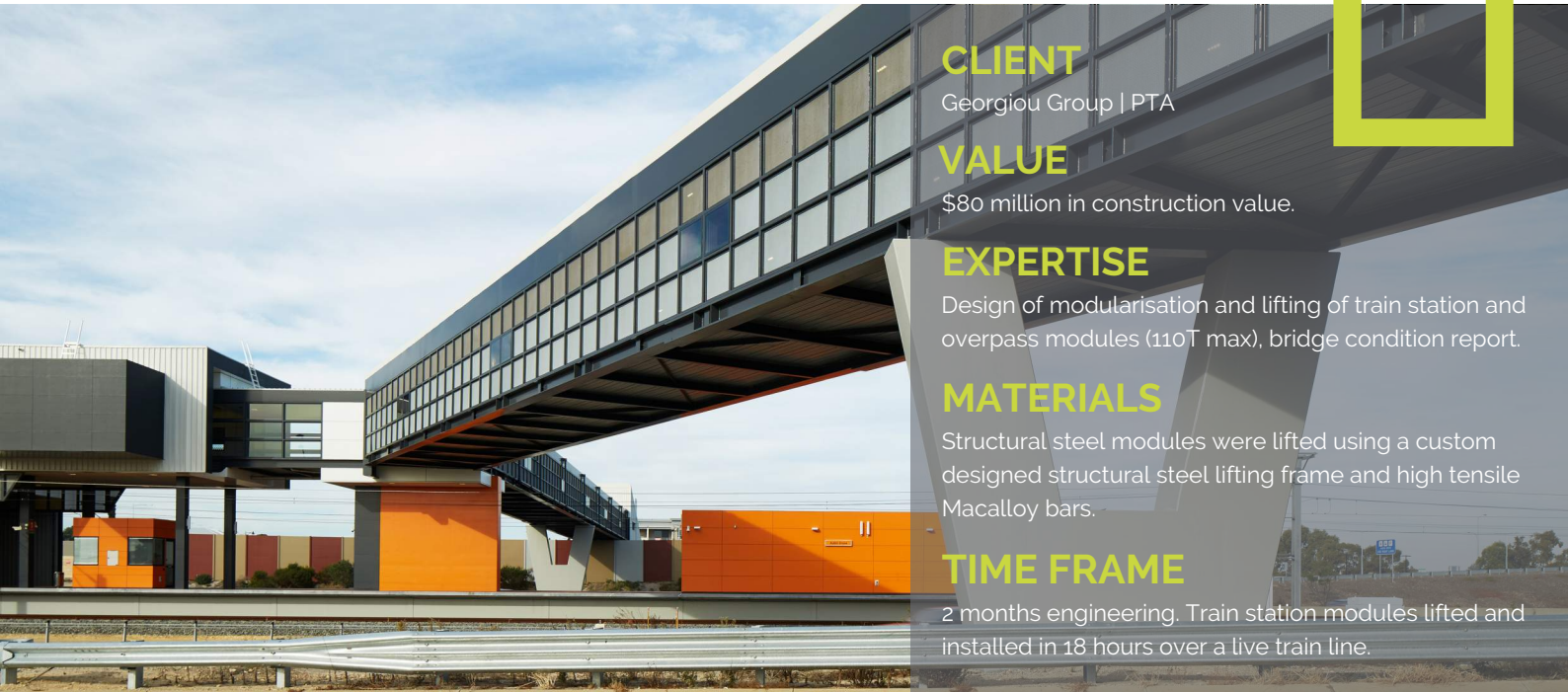
This particular scope involved lifting a 60-metre long pedestrian bridge into place from the Mitchell Fwy, over a bustling Scarborough Beach Road.

The new footbridge spans 7.4 metres in width and will make accessing Perth's CBD via foot and bike safer thanks to a separated cyclist and pedestrian path.

Peritas consulted with BMD to devise a safe & simple option for the lift. This continued BMD's successful delivery of the Mitchell Freeway Southbound Widening project for Main Roads Western Australia.







### CLIENT

Georgiou Group | PTA

### VALUE

\$80 million in construction value.

### EXPERTISE

Design of modularisation and lifting of train station and overpass modules (110T max), bridge condition report.

### MATERIALS

Structural steel modules were lifted using a custom designed structural steel lifting frame and high tensile Macalloy bars.

### TIME FRAME

2 months engineering. Train station modules lifted and installed in 18 hours over a live train line.

## AUBIN GROVE TRAIN STATION, WA

### PROJECT NOTES:

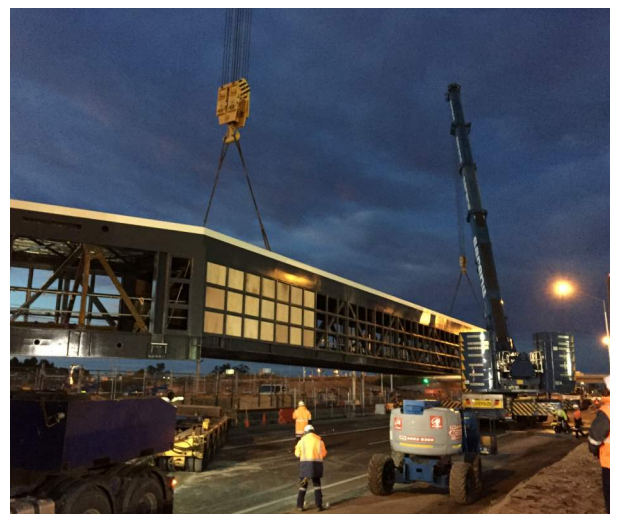
Peritas was engaged for our innovative thinking applied to construction engineering. The builder on this state of the art train station was interested in modularising the station and overpass to minimise site labour costs and freeway shutdown times and reduce risks associated with working between live train lines.

Peritas designed a safe and efficient method of lifting the five train station modules utilising the high tensile properties of macalloy bars and a single lifting frame with common lifting points between the frame and crane.

This meant the frame did not need to be put down and re-rigged between lifts. All modules were disconnected from the inside, ensuring a safe workplace for the rigging crew.

**It was advised that the lifting would cause shutdowns to the freeway and the train line for 72 hours, Peritas managed to deliver a safe & effective schedule that saw all modules were lifted and installed effectively within 18 hours.**

Peritas are proud of the safe and effective lifting method our team delivered & will continue to utilise such methodology in the future.





### CLIENT

Swan River Pedestrian Bridge Authority & MRWA

### VALUE

\$90 million in construction value.

### EXPERTISE

Construction Engineering design documentation

### TIME FRAME

1 months from schematic design to final design and construction commencement.

## MATAGARUP BRIDGE, PERTH WA

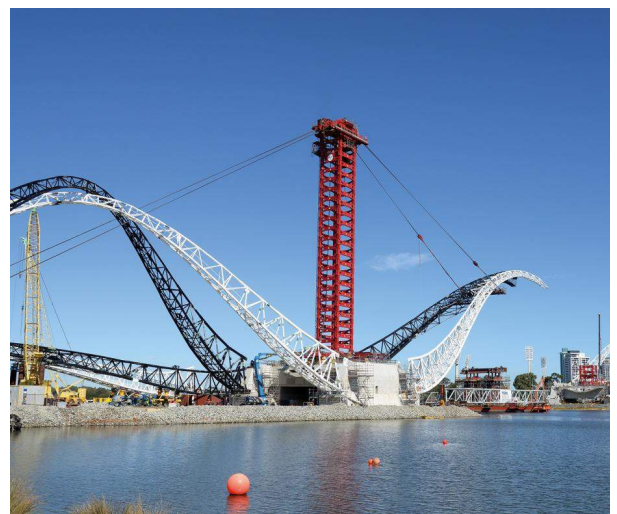
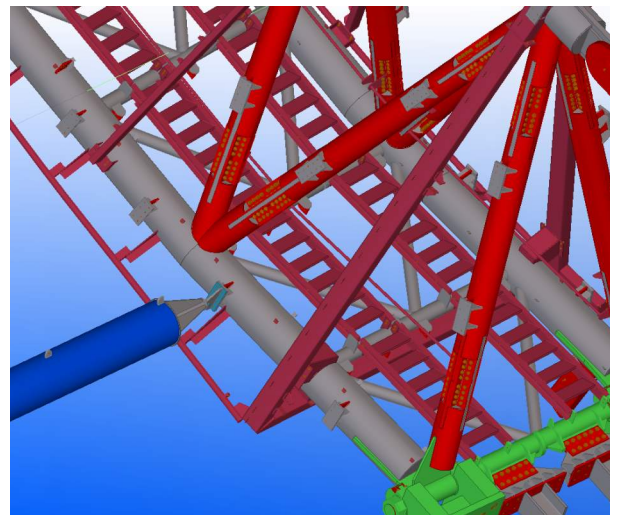
### PROJECT NOTES:

Peritas Consulting were engaged initially by the Swan River Pedestrian Bridge Alliance to provide construction engineering design assistance for the installation of the bridge steel wishbone arches.

The proposed installation method, using a hydraulically controlled tuning brace between the wishbone ends was considered impractical. Peritas designed a far simpler (and cheaper) method of adjusting the tuning brace, shop detailed the members and assisted the contractor in the procurement of the necessary materials.

Peritas also designed a temporary landing nose to be fixed off the concrete abutments to receive the ends of the wishbone arches from the installation barge.

Following this work, Peritas was engaged by Main Roads WA to complete a 3rd party verification of the lifting methodology of the arches, and complete reviews of the jacking strand plates using FEA analysis.





## CLIENT

Georgiou Group & Mainline Demolition.

## VALUE

\$50 million in construction value.

## EXPERTISE

Structural design, documentation and shop detailing of steel formwork, construction engineering, demolition design of existing bridge.

## TIME FRAME

3 months engineering and shop detailing.



## MANDURAH TRAFFIC BRIDGE, WA

### PROJECT NOTES:

As a result of the success of the Aubin Grove train station project, Peritas was again engaged to provide construction engineering for the new Mandurah traffic bridge.

The bridge has a curved soffit in profile and also curves along all three axes along the span, making this task truly challenging.

Our engineers devised an innovative approach of designing reusable steel forms, comprising 3 soffit forms on hydraulic jacks, 2 internal traveler forms with hinges and hydraulics on rails that launched with the bridge before being withdrawn onto the following soffit and 2 external forms.

We undertook the steel shop detailing on this formwork to ensure that our requirements were satisfied.

Following the completion of the new bridge, we were engaged by Mainline Demolition to provide engineering assistance for the demolition of the old bridge. The demolition works went on to win the 2018 Civis Demolition Prize at the World Demolition Summit.







## CONTACT DETAILS

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### NEW BUSINESS ENQUIRIES

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