

# PERMAcast


Engineered for Efficiency







# WA's leading pre-caster

A nighttime photograph of a city skyline. In the background, several tall skyscrapers are illuminated with warm yellow and white lights. One building on the left has a blue sign that says "New Esplanade Hotel". Another building in the center has a "clubbank" sign. In the foreground, a wide, paved plaza with a pattern of rectangular stones is visible. A curved, low wall or barrier runs across the middle ground, illuminated with a bright purple light. Several tall, modern streetlights with multiple light sources are positioned around the plaza, creating a starburst effect. A large, white, umbrella-like structure is visible in the middle ground. The overall scene is a vibrant urban environment at night.

With a dynamic and highly skilled engineering team, an impressive storage yard and the capacity to simultaneously manufacture and manage multiple large-scale projects, PERMAcast truly is Western Australia's leading precast concrete supplier.



# BUSINESS SYSTEMS

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At PERMAcast our robust Business Management Systems complement our skilled workforce and form the foundations of everything we do. Our well organised Quality and Safety Management Systems are critical in our proven ability to safely deliver high quality products, on time, on budget and to specification. In doing so, we mitigate risk for our clients and play a crucial role in their overall project success.



## Quality

The quality and reliability of PERMAcast products and services are the foundation of the success of the organisation. We aim to constantly develop and improve the business, whilst striving to continually meet or exceed the expectations of our customers. PERMAcast's continual success is made possible with the aid of a well organised Third Party Certified Quality Management System.

Having delivered thousands of custom products to the state's largest Infrastructure, Oil & Gas and Resource projects over many years is testimony to the robust nature of PERMAcasts Quality Management System.

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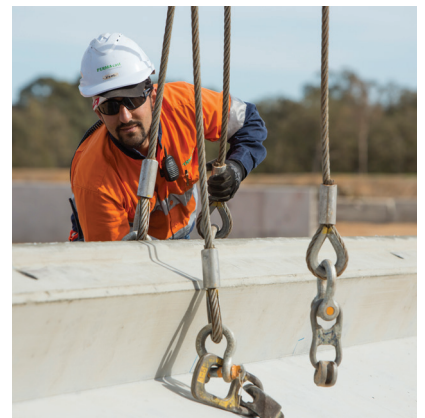
# BUSINESS SYSTEMS

## Safety

PERMAcast is committed to protecting the safety and health of all employees, contractors, visitors and the community who are impacted by our activities and believes that all injuries, industry related diseases and incidents are preventable. Our commitment to health and safety is paramount and a vital factor in PERMAcasts expansion to date and into the future.

PERMAcast recognises strong health, safety and environmental performance is vital for efficient operation of large scale precast facilities.

PERMAcast's Safety and Quality Procedures have previously been approved for use by BHP, Woodside, Rio Tinto, KJV, Chevron, Water Corporation, Main Roads WA, Apache Energy, SKM, Leighton Contracting, Brookfield Multiplex and Laing O'Rourke to name a few.



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# CAPACITY

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As Western Australia's leading pre-caster, PERMAcast's technical, manufacturing and storage capacities are the envy of the industry. A winning combination of highly skilled in house engineers and large scale modern manufacturing and storage facilities allows PERMAcast to engineer efficiencies into manufacturing methodologies, which ultimately provides cost benefits for our clients projects.



## Manufacturing Capacity

PERMAcast operates a large scale state of the art precast facility forty five minutes south of the Perth CBD. PERMAcast's manufacturing facilities include a large 3700m<sup>2</sup> undercover factory which incorporates an impressive 800m<sup>2</sup> casting bed. Additionally we have a sizable modern outdoor production area incorporating large scale 25t portal cranes and modern prestressing beds suitable for manufacturing large bridge beams and other bespoke prestressed concrete products.

With the capacity to simultaneously manufacture and manage multiple large-scale projects, PERMAcast truly is Western Australia's leading precast concrete supplier.

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# CAPACITY

## Technical Capacity

PERMAcast's engineering capacity and capabilities are unrivaled in the industry. Our entire management team are qualified engineers with several decades of specific precast experience. Therefore, when our engineers are involved at the design stage the result is a more efficient and cost effective construction for our clients.

Our team of qualified QA engineers are dedicated to ensuring the highest quality standards are met on every project and our dedicated in house design staff ensure continuity and open communication from design to production, further enhancing quality outcomes and operational efficiencies.



## Storage Capacity

PERMAcast provides an enviable 250,000m<sup>2</sup> of storage space. This allows us to maximise production efficiencies and thus provide clients with the most cost competitive production solutions. The benefits in terms of maximising our clients own project efficiencies and simplifying their project logistics are therefore as endless as our storage capacity.

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# PROJECT EXPERIENCE



## Elizabeth Quay

### Polished Precast Concrete Edge Seating

- Client: Denmac Pty Ltd
- Project Period: 2015
- Project Value: \$500K

### Project Specifications:

- 104 No Curved Seating Units
- 199 No Straight Seating Units

### Project Details:

- Polished Concrete requiring high class of finish.
- Various radius curves required to follow the irregular shape of the Quay.
- Storage for just in time delivery.
- Value adding – Anti-graffiti sealing applied in yard prior to delivery.



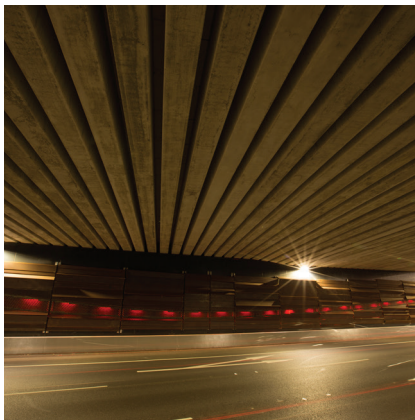
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# PROJECT EXPERIENCE



## Gateway WA

**Prestressed Concrete Bridge Planks**

**Gas Protection Trench Units**

**Horrie Miller Overpass – Wing Beams and Planks**

**Facia Panels and Precast Column Formwork**

**Bridge Parapet Panels**

- Client: Gateway WA
- Project Period: 2013 – 2014
- Project Value: \$3.5M

### Project Specifications:

- 228No Prestressed Bridge Planks (15-24m Long)
- 54No L Shape Protection Walls and Cover Units
- 4No Post Tension Wing Beams (110T each)
- 578No Precast Parapet Panels

### Project Details:

- Wing Beams extremely complicated products requiring 3D modeling of reinforcement to ensure correctness during fabrication.
- Parapets were complex shapes and very little repeatability requiring complicated steel moulding.
- Storage for just in time delivery.
- Class 2 finish to all products to comply with stringent project specifications.
- Single pour construction –no joint/leaks.
- Value adding – post tension of wing beams.
- Working closely with client to resolve design changes and improve construction efficiencies.
- Large amounts of cast-in items for onsite connections.

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# PROJECT EXPERIENCE



## Perth Stadium

### Precast Concrete Seating Plats

- Brookfield Multiplex
- Project Period: 2015 - 2016
- Project Value: \$17M

### Project Specifications:

- 1330 No Lower Bowl Precast Seating Plats
- 827 No Middle Bowl Prestressed Seating Plats
- 1100 No Upper Bowl Prestressed Seating Plats

### Project Details:

- Highly technical due to the high number of types, installation sequence and program.
- 51 No different structural types and over 800 No units types.
- Manufacturing of up to 25 No units per day.
- Accelerated program from award.
- Design was progressive resulting in Permacast working very closely with the designers, architects and client.
- Over 36,000m<sup>2</sup> of Storage used for just in time delivery.
- BIM modelling provide by Permacast.



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# PROJECT EXPERIENCE



## Wheatstone Gas Project

### Trench Units & Fire Walls

- Laing O'Rourke Australia
- Project Period: 2015-2016
- Project Value: \$20M

### Project Specifications:

- 975 No. Culvert Trench Units (Avg 20T)
- 113 No. Perlite Lined Trench Units
- 760 No. Perlite Wall Panels (Avg 170kg)
- 703 No. Fire Wall Panels (Avg 4T)
- 254 No. Firewall Columns (Avg 14T)

### Project Details:

- No two precast culvert units the same due to each having to match both the FFL gradient and falls.
- 3D modelling required to ensure constructability and accuracy in manufacturing of precast units.
- Originally designed as an insitu solution.
- Highly specified products with stringent quality requirements and reporting.
- Detailed key joint arrangements provided to ensure no leaking at in-situ connections.
- Storage of up to 700No Culverts for just in time delivery.
- S50 LH Concrete with high specification requirements for overnight strengths of 20Mpa.
- Daily casting of 6No culverts per day.



# PROJECT EXPERIENCE



## Apache Varanus Island Wharf Upgrade

### Supply of Precast Caisson Units

- Client: Apache Energy Limited
- Project Value: \$1M
- Project Period: September 2012 – December 2012

### Project Specifications:

- 9No Caissons (45T each) 4.2m x 3.0m x 4.8m high.
- 9No Caissons (33T each) 4.2m x 3.0m x 3.65m high.

### Project Details:

- Highly specified S50 Low Heat mix design.
- Fully Galvanised reo (avg. 3.2T/reo cage).
- Cast in specialised SS anchors for connecting fenders and ladders.
- Permacast installed all fenders and ladders prior to shipment.
- Produce 1 unit per day to meet short project schedule.
- Project specific 110T crawler crane for production and 130T hydraulic crane for load out.
- Permacast large storage area was required pre-delivery.

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# PROJECT EXPERIENCE



## Beenyup WWTP

### Supply of Post Tension Roof Panels and Ring Beams for Digester Tanks

- Client: W2W Alliance Black and Veatch Thiess JV
- Project Value: \$700k
- Project Period: 2009

### Project Specifications:

- 60No Post Tension Roof Panels - 9T each
- 36No Post Tension Roof Panels - 11T each
- 2No 6.5m Dia Inner Ring Beams- 26T each
- 4No Epoxy Lined Roof Covers - 8T each

### Project Details:

- Dimensional tolerances for all products supplied were +/- 3mm.
- The project was extremely technical and panels were completed with various finishes.
- Up to 50 cast-in products per unit.
- PERMAcast engineers designed steel moulds to meet the project specifications.



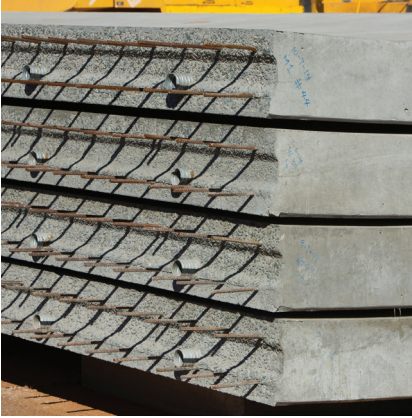
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# PROJECT EXPERIENCE



## East Rockingham Waste Water Treatment Plant & Onslow Tanks

### Post Tension Water Tank Panels - ERWWTP

- York Civil Pty Ltd
- Project Period: 2014
- Project Value: \$1.2M

### Post Tension Water Tank Panels - Onslow

- Structural Systems
- Project Period: 2014
- Project Value: \$1M

### Project Specifications:

- ERWWTP - 176No Curved Tank Panels (11T)
- ERWWTP - 16No Buttress Panels (18T)
- Onslow - 56No Curved Tank Panels (19.2T)

### Project Details:

- Tight construction programs issued for fabrication.
- Delivery of panels up to 1400km (Onslow).
- Detailed key joint arrangements provided to ensure no leaking at in-situ connections.
- Storage for just in time delivery.
- Cast-in of Stainless Steel access units to each of the tanks.
- Value adding - Structural Systems completed vertical post-tensioning within Permacast Yard
- S50 Concrete with high specification requirements for use in potable water.



# PROJECT EXPERIENCE



## Gorgon Civils & UG Services

### Precast Concrete Manholes

- Client: Leighton Contracting
- Project Value: \$10M
- Project Period: 2011 – Feb 2013

### Project Specifications:

- 610No Manholes (15-20T)
- 610No Conversion Slabs
- 610No Access Shafts

### Project Details:

- No two manholes the same.
- 1591 penetrations (+/- 5mm Tolerance).
- Storage in excess of 330No manholes.
- Class 2 finish to all products to comply with stringent project quarantine standards.
- Single pour construction – no joint/leaks.
- Value adding – supply and install all ladders.
- Managed logistics co-ordination between Leighton, their nominated sub-contractor and PERMAcast.

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# PROJECT EXPERIENCE



## Mitchell Fwy Extension

### Prestressed Tee-Roff Beams

- CPB Contractors Pty Ltd
- Project Period: 2016
- Project Value: \$5M

### Project Specifications:

- 54No Tee-Roff Beams (Avg 90T)
- 4No Bridges

### Project Details:

- Design, Fabrication and Commissioning of new Prestress Bed facility.
- Daily Casting required to achieve tight construction program.
- Complex connection details to end of beams to create continuous beams.
- Installation of beams over night to allow for shutdown of public rail system.
- Class 2 finish.
- Delivery included with Permacast scope some beams requiring Police escort due to width.
- Detailed key joint arrangements provided to ensure no leaking at in-situ connections.
- Storage of up to 25No beams for just in time delivery.
- S50 Concrete with high specification requirements for overnight strengths of 40Mpa.

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# PROJECT EXPERIENCE



## RTIO Cape Lambert Car Dumpers

### Supply of Precast and Prestressed Beams and Headstocks

- Client: DTMT
- Project Value: \$2.5M
- Project Period: October 2012 – April 2013

### Project Specifications:

- 160 No Precast Beams (9-17T each)
- 13 No Precast Headstock Soffit (8-10T each)
- 121 No Prestressed Beams (11-14.5T each)

### Project Details:

- Tight dimensional tolerances to ensure on-site constructability.
- Cast in's for ancillary services including plates and formwork connections.
- Designed and manufactured for high live loads.
- Continual liaison with client to ensure logistical efficiencies.



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# PROJECT EXPERIENCE



## Southern Seawater Deslination Plant Stage 1 & 2

### Supply of Precast Wall Panels and Culverts

- Client: SSJV
- Project Value: \$13M
- Project Period: Feb 2010 – 2012

### Project Details:

- PERMAcast supplied over 31,000sqm of precast walls panels.
- PERMAcast supplied large box culverts and lids totalling over 2,600T.
- 100 year design life meant the components were manufactured using a S50 low heat cement mix - uncommon for precast production.
- PERMAcast was producing an average of 200sqm of panels per day to meet the tight construction programme.
- Storage of over 450 panels prior to delivery was made easy with the vast storage area available at the PERMAcast Cardup facility.

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# PROJECT EXPERIENCE



## Woodside Pluto LNG

### Supply of Precast Drainage Components

- Client: BGC Contracting
- Project Value: \$13M
- Project Period: Dec 2008 – June 2009

### Project Specifications:

- 150No AOC Manholes - Epoxy Lined (5T – 15T)
- 8No EOF Manholes (5T – 30T)
- 68No Firewater Valve Pits
- 42No Valve Pits
- 46No Fire Traps
- 91No Catch Basins
- 2400No Electrical Trench Units (2.45m Long)

### Project Details:

- Single pour construction - no construction joints, eliminating the possibility of potential leaks onsite.
- Manufacture of over 400 types of pits and manholes, where no two items were the same. Extensive rationalisation.
- Due to the rapid installation of the products, PERMAcast was able to accelerate the production program to turn out up to 1500t/month of products in the latter stages of the contract.
- All units fitted with ladders and coated with epoxy prior to site delivery.
- PERMAcast prepared all penetration to receive onsite grouting of GRE and concrete pipes.

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Our well organised Quality and Safety Management Systems are critical in our proven ability to safely deliver high quality products, on time, on budget and to specification. In doing so, we mitigate risk for our clients and play a crucial role in their overall project success. In short, our success becomes your success.

PERMAcast's technical, manufacturing and storage capacities are the envy of the industry. A winning combination of highly skilled in house engineers and large scale modern manufacturing and storage facilities allows PERMAcast to engineer efficiencies into manufacturing methodologies, which ultimately provides cost benefits for our clients projects.

Combining robust effective Business Systems with extensive engineering, production and storage capacities has allowed PERMAcast to build a reputation as the leading industry specialist in supply of custom precast and prestressed solutions for the State's major Oil & Gas, Infrastructure and Resource projects.

The quality and reliability of PERMAcast products and services are the foundation of the success of the organisation. We aim to constantly develop and improve the business, whilst striving to continually meet or exceed the expectations of our customers. We look forward to working collaboratively with you to provide positive outcomes for your next project.







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