

CAPABILITY STATEMENT

MINING



OVERVIEW

Peritas have a long-standing history with mining projects across Australia. More predominantly in Western Australia, we have delivered in excess of 50 projects over the past 10 years ranging from \$1-\$380 million in construction value. We are renowned for our quality, service and delivery across a variety of bulk earthworks, temporary works, non-process infrastructure (NPI) and process infrastructure (PI) designs.

RADIO HILL MINE REFURBISHMENT - PI

RECENT PROJECTS:

NON-PROCESS INFRASTRUCTURE

ALBEMARLE LITHIUM PROCESSING PLANT, KEMERTON WA
 TIANQI LITHIUM PROCESSING PLANT, KWINANA WA
 CAPE LAMBERT UTILITY BUILDING, WA
 HOPE DOWNS, NEWMAN
 BABY HOPE PROJECT, NEWMAN
 MINING AREA C, NEWMAN
 WEST ANGELAS MEM WORKSHOP, NEWMAN
 PORT HAVEN CENTRAL FACILITIES, PORT HEDLAND
 QUBE BULK STORAGE FACILITIES, WA
 MESA J HV & LV FACILITIES, PILBARA WA
 KOODAIERI LABORATORY & CAMPS 3&4, PILBARA WA

PROCESS INFRASTRUCTURE

RIO TINTO SMP TRANSPORT FRAMES, MESA A NEWMAN
 RADIO HILL MINE REFURBISHMENT, KARRATHA WA
 PINJARRA FILTRATION FACILITY, PINJARRA
 MODULAR IRON ORE HANDLING PLANT, YARRIE
 DRY MIX PLANT, KWINANA
 PLANT EXPANSION, KWINANA
 NAMMULDI CRUSHING PROJECT, PILBARA
 BAUXITE HILLS, QUEENSLAND
 UTAH POINT, PORT HEDLAND
 CLINKER STORAGE NAVAL BASE, WA
 FMG SOLOMON MINE, MOUNT SHEILA WA
 ROY HILL SAMPLING STATION, NEWMAN WA
 BGC LIME PLANT, KWINANA WA
 BALD HILLS CRUSHING, KALGOORLIE WA
 KAMBALDA PRIMARY CRUSHING STATION, KALGOORLIE



BHP'S PORT HAVEN CENTRAL FACILITIES - NPI



RIO TINTO'S , HOPE DOWNS HV TUNNEL WA - NPI

DISCIPLINES

STRUCTURAL & CIVIL DESIGN

- Early budget planning & feasibility,
- Masterplanning,
- Landfill management,
- Preliminary documentation for tenders,
- Concept, schematic and detailed design, documentation,
- Construction support,
- Storm water drainage, management & disposal,
- Flood mitigation & management.

TEMPORARY WORKS DESIGN

- Temporary & Transport Framing,
- Lifting & Rigging,
- Construction Methodology,
- Bespoke Formwork,
- Modularisation,
- Safety in design,
- Panel Propping,
- Design Review/Verification



CAPE LAMBERT UTILITIES BUILDING, RIO TINTO

SPECIALIST COMPETENCIES

Non Process Infrastructure (NPI)

Our capability in the NPI mining space includes:

- Workshops & warehouses
- Insitu facilities
- Camps & associated infrastructure
- Roads & drainage including mine access & hardstands



RIO TINTO - KOODAIKERI LABORATORY, WA - NPI

Process Infrastructure (PI)

In addition to our NPI capability, Peritas have design and analysis experience for structures involved in Process Infrastructure. These include:

- Structural Finite Element Analysis (FEA) on a variety of mining equipment & infrastructure,
- Design of supporting structures for conveyors, plant and various networks.



ALCOA'S PINJARRA FILTRATION FACILITY, WA - PI

Bulk Earthworks

Peritas also provide civil design for large bulk earthwork packages which include major cut to fill, hardstand & building pad preparation, roads, open drains, parking, and other ancillary works (including dams, silt ponds, etc).



RIO TINTO'S BABY HOPE WA - NPI



CLIENT

Kerman Contracting

EXPERTISE

Structural & Civil design documentation & construction support.

LOCATION

Kemerton WA (outside of Bunbury)

TIME FRAME

4 months design across all buildings and civils.

ALBEMARLE LITHIUM PROCESS PLANT, KEMERTON WA

PROJECT NOTES:

Following the success at Tianqi's Lithium Processing Plant, Peritas were engaged by Kerman Contracting to provide structural and civil design for the 9 buildings located at their Kemerton site just outside of Bunbury WA.

Peritas' scope of works included structural design for the majority of the NPI buildings on the site, as well as the full structural and civil design of the pallet storage building.

Due to the success of the building engineering, Peritas and Kerman had their scope extended to include various concrete works throughout the site. This included a 22,000m² handstand for the storage and movement of containers throughout the site. Peritas proposed a combi slab which incorporated steel fibre reinforcement combined with mesh reinforcement. This eliminated problematic movement joints and allowed for a more efficient design.





CLIENT

Tianqi Lithium

EXPERTISE

Structural & civil design documentation
& site supervision.

LOCATION

61 Donaldson Rd, Kwinana Beach WA
6167

TIANQI LITHIUM PROCESSING PLANT, KWINANA WA

PROJECT NOTES:

Peritas were engaged by Kerman Contracting to provide competitive design solutions for the non-process infrastructure at the Tianqi Lithium processing plant.

Peritas worked with Kermans to develop an innovative design for tender purposes and then worked closely with the construction team to deliver the building designs seamlessly.

The design consisted of 4 buildings with a combined square meterage of 10,500 m².

Peritas have a long association with NPI and materials handling projects and this expertise provided fruitful for all involved.





CLIENT

Process 26.

EXPERTISE

Structural design documentation & construction support.

MATERIALS

Structural steel.

TIME FRAME

3 months design across all refurbished and new elements.

RADIO HILL PROCESS PLANT REFURBISHMENT, KARRATHA WA

PROJECT NOTES:

Peritas were engaged by Process 26 to integrate the structural elements of a 500,000 tpa gravity gold circuit into an existing Ni-Cu flotation plant.

The scope included maximizing the reuse of existing equipment. In conjunction with Artemis, a process flow diagram and mass balance were developed for the integrated gold circuit. Peritas performed all civil & structural engineering for the gravity circuit integration.

Onsite activities consisted of the following:

- Installation of all concrete and civil works
- Refurbishment of primary and secondary crushing station
- Integration of a new Metso HP200 tertiary crusher
- Structural audit & repairs to existing plant in accordance with DMIRS requirements
- Replacement of RE Wall with mass retaining wall
- Refurbishment of existing mills
- Supply and installation of DSM screen and cyclones for mill classification
- Supply and installation of gravity circuit feed conveyors
- Supply and installation of gold room and security system
- Redesign and refurbishment of HV Electrical distribution network
- Refurbishment of LV electrical reticulation system
- Upgrade of SCADA system
- Relocation and installation of new 10m tails thickener
- Raw water dam refurbishment
- Air and water system upgrade



CASE STUDY - MINING-NPI



CLIENT

Rio Tinto / Pindan

VALUE

\$25 million in construction value.

EXPERTISE

Civil & Structural design documentation & construction support.

TIME FRAME

3 Months Engineering.

UTILITIES WORKSHOP, CAPE LAMBERT WA

Peritas provided structural engineering design, documentation and construction support services to Pindan for the design and construct of Rio Tinto's Utilities Workshop at Cape Lambert.

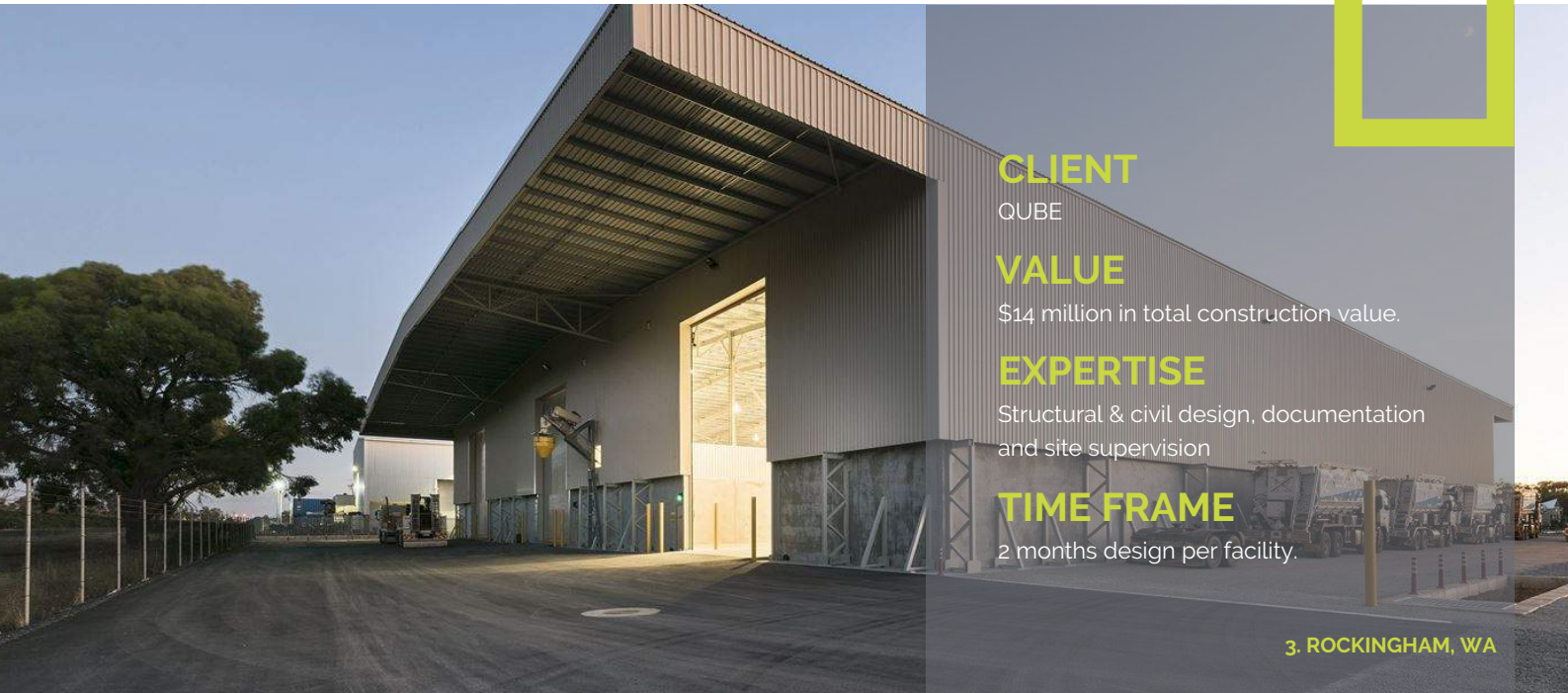
The steel framed building was completed in 2016 and comprised of a 1150m² administration/office area (approximately) and a 615m² workshop.

Aside from being designed for cyclonic conditions the administration area was design as an importance level 4 structure and the workshop included a 20tonne gantry crane.

All design and documentation was carried out in accordance with the RTIO standards.

Peritas are proud to be the designer for another successful Rio Tinto project.





CLIENT

QUBE

VALUE

\$14 million in total construction value.

EXPERTISE

Structural & civil design, documentation and site supervision

TIME FRAME

2 months design per facility.

3. ROCKINGHAM, WA

STORAGE FACILITIES, WA. PICTON, GERALDTON & ROCKINGHAM

PROJECT NOTES:

The first of these three projects was built in Picton, Bunbury WA which is a 5,000sqm 15m-high bulk storage warehouse that comprised of 6 individually separated cells. The facility included 4m-high Tilt up concrete retaining walls, steel framed and cladded to dust proof each cell from cross contamination.

Next came Geraldton, where we refined our design to incorporate a more efficient building layout and precast panels supported by structural steel columns. This 15m-high, 5,000sqm facility comprises of 6 individually separated cells

Finally Rockingham was designed which became a combination of the best of the previous two structures. A 5,000sqm bulk storage facility to retain fertiliser materials. This included over 2,000sqm of concrete in the floor and 4m-high, 170mm thick concrete precast retaining walls that supported the steel superstructure.

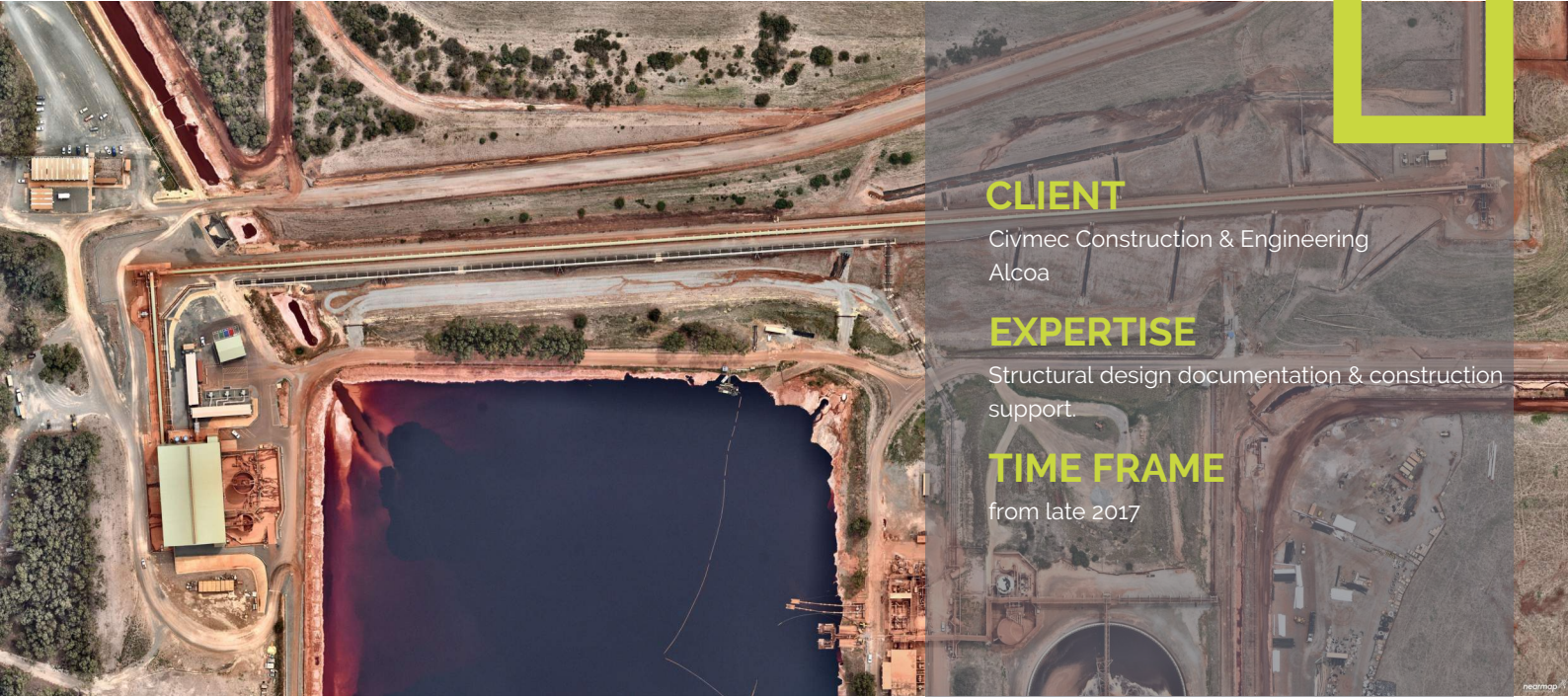
Our continual improvement approach was again on display and has contributed to successful projects for all stakeholders.



2. GERALDTON, WA



1. PICTON, BUNBURY WA



CLIENT

Civmec Construction & Engineering
Alcoa

EXPERTISE

Structural design documentation & construction support.

TIME FRAME

from late 2017

**RESIDUE FILTRATION FACILITY,
PINJARRA WA**

PROJECT NOTES:

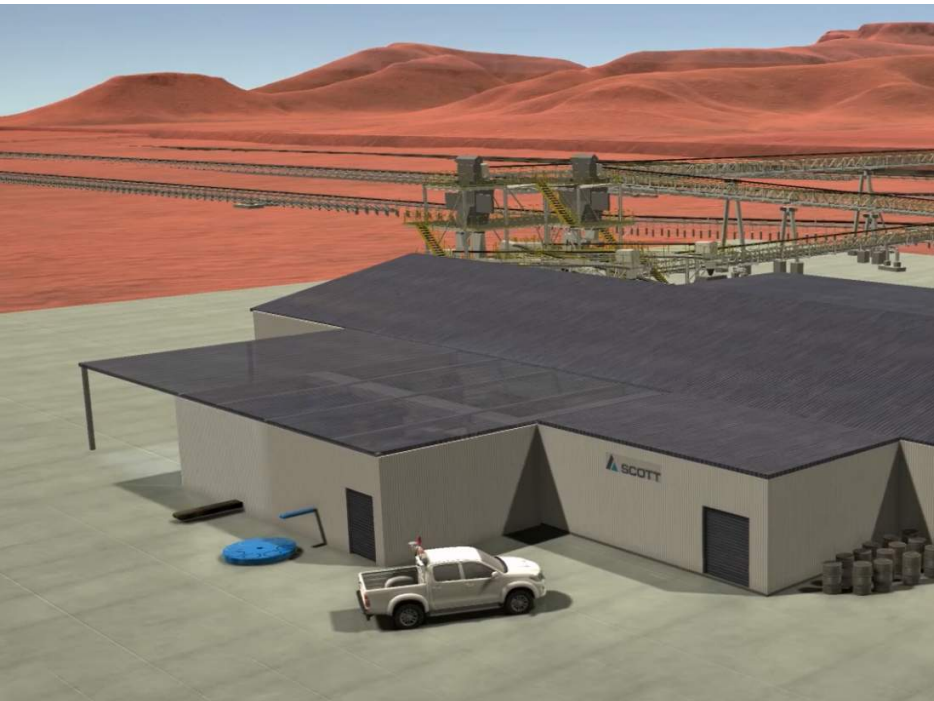
Peritas have provided a variety of structural engineering services for Civmec Construction & Engineering for the Alcoa's Residue Filtration Facility Depot in Pinjarra.

Since late 2017 as Peritas, our senior staff have provided the following services:

- Value engineering for majority of the conveyors:
 - Expansion loop arrangement for all conveyors
 - Belt counterweight support structures
- Structural engineering for
 - Switchrooms
 - Take up trolley
 - Take up tower
 - Pipe sleepers
 - and other various NPI structures
- Surrounding external concrete hardstand & internal concrete bunds for mechanical equipment



CASE STUDY - MINING-NPI



CLIENT

Rio Tinto
Kerman Contracting - Laboratory
Complete Site Service - Camp 3 & 4

VALUE

\$25 million in combined construction value (estimated).

EXPERTISE

Civil & Structural design documentation & construction support.

TIME FRAME

2020 - 2021.

KOODAIDERI TESTING LABORATORY

KOODAIDERI PROJECT, NEWMAN WA

PROJECT NOTES:

Peritas are providing civil and structural engineering design, documentation & construction support services as part of two design & construct team for the state of the art laboratory facility & Camps (3 & 4) at Rio Tinto's Koodaideri mine site.

This includes:

a) Koodaideri Laboratory

Peritas were engaged by Kerman Contracting under a design and construct contract to provide structural and civil engineering services for the Testing Laboratory building at the Koodaideri mine. The building consists of a structural steel frame supported on foundations and a concrete slab, with walls and roof consisting of insulated panels for thermal control.

b) Koodaideri Camps 3 & 4

Peritas were engaged by Complete Site Service to provide structural and civil design, documentation and construction support for the following buildings:

- EPCM OfficeCrib
- Meeting & Office Rooms
- Medical Facility
- Female, UA WC & Cleaner Male & UA WCAdmin
- Retail Shop
- Ice Room
- Communications Room
- First Aid
- Gym
- Male Ablution Female & UA Ablution
- Cleaners Laundry
- Multifunction Facility



CASE STUDY - MINING-NPI



CLIENT

Rio Tinto / Austral Construction

VALUE

\$25 million in construction value.

EXPERTISE

Civil & Structural design documentation & construction support.

TIME FRAME

4 Months Engineering. Completed in 2019.

BULK FUEL STORAGE & DISTRIBUTION FACILITY

BABY HOPE , WA

PROJECT NOTES:

Peritas provided civil and structural engineering services as part of a design & construct team for the Baby Hope project. As part of our services we provided design and documentation for the following facilities;

Production Hub

- Earthworks including roads, drainage, parking areas and separation windrows;
- Administration building including crib room, ablutions block, ice room/locker room and office/pre-start room arranged around a central covered structure;
- Concrete slabs and foundations for Mining equipment maintenance (MEM) workshop (shipping container mounted dome shelter);
- Concrete slabs for potable water tank and treatment plant;
- A five (5) ml turkeys nest and associated infrastructure (production bores feeding turkeys nest located approximately two (2) km south west of production hub);
- Entry boom gates (located approximately five (5) km south west of the production hub);

Bulk Fuel Storage & Distribution Facility

- Earthworks including roads, drainage, parking areas and separation windrows;
- Foundations for two (2) x 200kL storage tanks and associated concrete works;
- Concrete slabs and drains for road tanker unloading system;
- Concrete slabs for heavy mining equipment (HME) and light vehicle (LV) refuelling;
- Concrete works (including drive in sump) for oily water separation and evaporation pond;
- Office and ablution building;
- Concrete slabs and foundations for MEM workshop (shipping container mounted dome shelter);



PRODUCTION HUB



PRODUCTION HUB

CASE STUDY - MINING-NPI



CLIENT

Rio Tinto / Austral Construction

VALUE

\$10 million in construction value.

EXPERTISE

Civil & Structural design documentation & construction support.

TIME FRAME

4 Months Engineering. Completed in 2019.

HV TUNNEL

HOPE DOWNS 4 , NEWMAN WA

PROJECT NOTES:

Peritas provided structural engineering services with regard to the design and documentation of the precast arched tunnel.

Our civil department scope included stormwater design along with roadway/intersection design & documentation.

Our engineers work with the builder to overcome geotechnical issues with the site along with developing a solution that could support the higher density material and mining equipment expected to traverse/cross the tunnel.



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CASE STUDY - MINING INFRASTRUCTURE



CLIENT

FMG / Decmil Besix Joint Venture (DBJV)

EXPERTISE

Civil design documentation & construction supervision.

LOCATION

Anderson Point, Port Hedland WA

ONSHORE TUG INFRASTRUCTURE, ANDERSON POINT WA

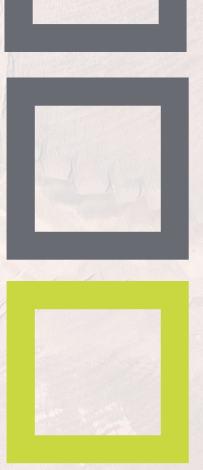
PROJECT NOTES:

Peritas were engaged by FMG to undertake the civil engineering design and documentation for the proposed onshore facilities at Anderson Point, Port Hedland. This entailed the provision of a tug fleet, associated marine and onshore support facilities including a new fuel farm, dome shelter workshop, office, ablution facilities and emergency vehicle slab.

Peritas provided:

- Review of existing unsealed hardstand and determine adequacy of hardstand for a B-triple road train fuel delivery vehicle.
- Predicting pavement failure mode based on existing hardstand material.
- Assessing existing concrete slab adequacy to be re-used for slab (workshop) and foundation for 200kl self bunded fuel tank.
- Undertake earthworks grading suitable for a triple road train.
- Undertake vehicle movement assessment to ensure accessibility by triple road train.
- Undertake surface runoff drainage design.
- Complete detention basin design to manage off-site sediment transfer
- Complete safety in design assessment, including pedestrian stability safety and vehicle stability.
- Scour protection of embankment.





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