

SUSTAINABLE  
**solutions**

# ABOUT US

## sustainable solutions.

A Delta Group company with national scale and integrated systems.

As a Delta Group company, Grange Environmental Services is a key division of one of the largest diversified contractors of its type in the world today.

With 40 years of experience, over 680 staff and a fleet of more than 888 specialised plant and equipment, Delta Group have the financial, organisational and operational capacity to manage hundreds of projects at any one time - Australia wide.

Grange Environmental Services can offer single source project solutions involving multiple disciplines - civil and demolition, recycling and hazardous waste removal, plant and equipment transport logistics and rental, and specialist design or construction.

We can also exploit the scale and systems of Delta Group to maximise value for our clients and to synchronise our services, personnel and plant to meet the demands of any project in any location – metro, regional, remote or marine.

### › SAFETY FIRST

Nothing matters more to us than safety. It is our most important business practice and we demand visible leadership at every stage of a project and from everyone involved. Our triple certified integrated QSE management systems have been proven time and again in high risk environments, allowing us to continuously improve our practices and to build upon our reputation as best-in-class.

### › STAKEHOLDER MANAGEMENT

We pride ourselves on our ability to effectively manage diverse stakeholder groups and to carry out complex and challenging work programmes without disruption to residential amenity or ambience, public infrastructure and essential services, or commercial business operations. Our emissions, noise and vibration control measures are second to none, while our transport logistics and traffic management capability is equally impressive.

### › RISK MANAGEMENT

When you operate in high risk environments across multiple and complex legislative or regulatory frameworks, it is imperative we maintain the relevant corporate and individual licences to complete our work safely and to the standards our clients and communities expect. We also maintain comprehensive liability insurance and professional indemnity cover in strict accordance with best practice risk management and corporate governance protocols.

### › ABOVE & BEYOND

Combined, the Board and Senior Management of Grange Environmental Services represent more than 100 years of experience in the Australian building and construction industry. Our clients don't just benefit from our integrated project solutions and proven management systems, they benefit from a culture of collaboration and innovation that - when combined with the latest software and hardware solutions - allow our people to make the most of their remarkable skills and experience.



# ABOUT US

## sustainable solutions.

Single source project services,  
multiple disciplines.

Grange Environmental Services is at the forefront of 21<sup>st</sup> Century environmental management practices for remediating and rehabilitating commercial and industrial landscapes, including the application of triple certified integrated QSE management systems.

We have the capacity to invest capital expenditure in new technologies, plant and equipment to treat contaminants, as well as to meet any individual client or project requirement.

We can also offer turnkey recycling and waste management solutions to satisfy commercial and industrial project needs, including materials tracking management and reporting systems, a fleet of licensed transport vehicles and accredited waste transfer stations.



# ABOUT US

## sustainable solutions.

Proven skills and experienced management.

### Adam Leak Divisional Manager

Adam has nearly 10 years of experience with Delta Group, having first joined as a Project Manager in 2002 and returning in 2014 as State Manager Construction (Victoria). A graduate of the University of Melbourne with a BE Civil and a veteran of the Australian Army Reserves, Adam has developed exceptional leadership and technical civil engineering skills. In particular, he has established a strong track record of success in designing and developing environmental management works programmes to remediate and rehabilitate contaminated land for future development and public use.

### Fiona Bettiss Environmental Manager

An expert in environmental and sustainability management practices with blue chip companies such as Lendlease, Thiess and John Holland, Fiona brings a wealth of highly specialised knowledge to our management team. From soil testing and classification to site inspections and the preparation of plans, procedures and reports; the management and supervision of contractors and environmental specialists to waste management advice and due diligence for waste receivers – **Fiona's proven ability to navigate and overcome complex challenges is second to none.**





# SERVICES

## ➤ SITE REMEDIATION

Full site remediation and rehabilitation, including excavation and removal, containment and compaction, bioremediation and landfarming, in-situ stabilisation, screening and abatement, chemical treatment and stabilisation, capping, trenching and cover barriers, revegetation, backfilling, contouring, drainage, and membrane vapour barrier installation.

## ➤ ASBESTOS & HAZARDOUS WASTE REMOVAL

Delta Group is a 'Class A' licensed asbestos removal contractor and a recognised leader in the safe management of asbestos and hazardous waste disposal. Accurate waste management reporting in accordance with the Green Star environmental rating and credit programme, including emission control and management systems, materials tracking and a fleet of licensed waste transport vehicles.

## ➤ SPECIALIST & INTEGRATED SERVICES

Highly specialised marine based services for dredging and treating contaminated sediment in rivers or waterways. Carbon abatement planning and contracting, asset recovery and salvage, closure studies and plans, industrial plant decommissioning, and disaster or emergency response operations.

## ➤ SOIL & WASTE

Complete contaminant, chemical and soil analysis and testing, including laboratory based feasibility trials and bench studies. On site containment, chemical immobilisation, solidification and stabilisation, soil mixing and washing, and PASS or ASS treatment and neutralisation.

## ➤ SITE ASSESSMENTS

Comprehensive services in full compliance with National Environment Protection (Assessment of Site Contamination) Measures and State regulations. Desk top assessment of site history and use as well as a thorough examination of contaminants of primary concern. Detailed sampling plans and intrusive assessment protocols, independent laboratory analysis, assessment of contaminants and classification reports of soil for off-site disposal. Recommendations to facilitate complete remediation of land for commercial transfer or re-use.

## ➤ WATER & VAPOUR

Site specific treatment solutions involving extraction and treatment of groundwater and leachate, including soil vapour extraction (SVE), water sampling, metering, monitoring and disposal, and the dredging, treatment and removal of contaminated sediment and sludge in rivers and waterways.

## ➤ PLANT & EQUIPMENT

As a Delta Group company, Grange Environmental Services will call upon the largest fleet of specialised plant and equipment in Australia. It is purpose-built and regularly upgraded to ensure we capitalise on late model machinery and the efficiencies they bring to our integrated project management solutions. The fleet is meticulously maintained and our transport logistical systems allow us to manage plant and equipment movements across hundreds of projects at any one time.

We have an in-house fabrication workshop to custom design precision attachments and our capacity to invest capital expenditure in new plant and equipment gives us the flexibility to meet any client or project requirement.

# WHY GRANGE

## sustainable solutions.

Our capabilities are proven in a complex and demanding regulatory landscape and will support the transfer and re-use of land to ensure commercial and industrial development projects proceed as planned - on time, on budget and without incident.



### SCALABILITY

From small boutique developments to large scale multi-discipline projects, we have the scale and systems to get the job done right, first time.



### ACCOUNTABILITY

No other contractor understands the project lifecycle better than we do.  
**We will design a works programme that's delivered on time and on budget.**



### CAPABILITY

We can deploy capital in high specialised plant and equipment to meet the demands of any project in any location – metro, regional, remote or marine.





# KEY PROJECTS

## Balmoral Quay

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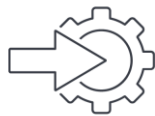
Project	Historic Shipyard Redevelopment
Client	Balmoral Quay Pty Ltd
Sector	Urban, Residential
Location	Regional Victoria

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Services provided:



Demolition



Specialist



Civil



Environmental



# Balmoral Quay

Delta Group was contracted by Balmoral Quay to complete a complex works programme to transform contaminated marine and industrial landscapes for the \$100m redevelopment of the historic Rippleside Shipyard in Geelong, Victoria.

Our scope of works included:

- Demolition of existing structure down to ground level.
- Site remediation and rehabilitation, including excavation and disposal of marine sediment and complete renourishment of Rippleside beach for public access/use.
- Design and construction of rock (sea) wall – 400m revetment and walkway.
- Design and construction of foundation systems for construction of residential structures – piling pads and foundation piles.
- Design and construction of site infrastructure and essential services, including management of approval processes – headworks, stormwater, sewer, mains water, electricity and gas supply, meter boards, multi circuit lighting, and hydrant facilities.

- Refurbishment of existing pier structure as well as design and construction of a 30 berth floating marina facility.
- Civil landscaping works – kerbs, pathways and hard specification pavements, retaining walls, roadways, hardstands.
- Emissions, noise and vibration controls.
- Transport logistics, including traffic management and supervision.

We engaged expert marine and civil engineering design consultants to support our project management team and commissioned highly specialised sub **contractors to meet and exceed our client's** expectations. Critical to our success was a successful stakeholder engagement plan involving multiple State and Local government departments and agencies, as well as local community and residential groups. Other key achievements included:

- Supply of 14,000t of rock and individual placement of armour rock to construct the 400m long rock (sea) wall and 600m water **front 'promenade' connecting** Rippleside and St Helens beaches.
- 65m extension of the existing box culvert storm water into Corio Bay, including a custom designed in situ waste management process for excavation and transport of contaminated marine sediment.
- Import and placement of 7,500 cubic metres of sand to renourish and re-shape Rippleside beach – extending 20m into Corio Bay with a 1-in-10 gradient beneath the surface to the natural seabed.
- Design and construction of a timber groyne to support and protect the new revitalised shoreline.
- Full compliance with strict environmental management condition - nil marine or land impacts.



## Balmoral Quay





# KEY PROJECTS

## Leichhardt Green

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Project	Commercial & Industrial Remediation
Client	Greenland Australia
Sector	Urban, Residential
Location	Suburban Sydney

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Services provided:



Demolition



Recycling



Civil



Environmental





# Leichhardt Green

Delta Group was contracted by Greenland Australia to design and deliver a major works programme for the transformation of a commercial and industrial site in Sydney's Inner West.

Our scope of works included:

- Strict environmental controls, including emissions (dust), noise and vibration measures.
- Design and construct piling and capping beam.
- Operation of Hydraulic containment wells.
- Relocation of major urban storm water drainage system.
- Demolition of existing slabs and footings.
- Removal of contaminated waste materials, including on site mitigation measures.
- Transport logistics, including traffic management and supervision.
- Community engagement and consultation.
- Relocation of services.

The project was unique due to the measures undertaken to mitigate the overall impact of contamination and the removal of contaminated materials. All works were conducted in strict accordance with the appointed environmental consultant to satisfy auditing and regulatory requirements.

Carefully targeted excavation works were carried out to remove contaminated groundwater plumes, while the engagement and consultation measures we undertook with the local community led to a successful realignment of a large diameter stormwater drain within the road reserve despite disruption to residential amenity and services. All works were actively managed with input from NSW Water authorities, local councils and the EPA.

Other key achievements included:

- Excavation and disposal of 27,000t of ACM impacted spoil.
- High level dust management.
- Excavation and disposal of 19,000t of general waste.
- Excavation and removal of 13,500t of natural material.
- Successfully limiting removal of upper level contaminated spoil to 1,000t.
- Installation and management of contaminated groundwater capture system.
- Design and construction of retention systems.
- Construction of 120m of 2.1\*1.8 box culvert and tap-ins to live stormwater main.

## Leichhardt Green





# KEY PROJECTS

## Melbourne Convention Centre & South Wharf

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Project	Mixed Use Precinct Redevelopment
Client	Probuild / Multiplex
Sector	Urban, Commercial
Location	Inner Suburban Melbourne

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Services provided:



Civil



Environmental



# Melbourne Convention Centre & South Wharf

Multiplex and Probuild (then Contexx) contracted Delta Group to complete civil construction works for \$1b development of the Melbourne Convention Centre and South Wharf retail and hospitality precinct.

Our scope of works included:

- Bulk/detailed excavation works allowing for the construction of reinforced concrete foundations.
- Concrete infrastructure – slab preparation and construction, retention systems and lift core rafts.
- Construction of crane bases.
- Emissions, noise and vibration controls.
- Transport logistics, including traffic management and supervision.
- Soil remediation – including analysis and testing.
- Site infrastructure - basement stormwater drainage systems.
- Site dewatering.

Situated on the banks of the Yarra River, this project involved an extensive remediation programme to capture and dispose of contaminated soil, as well as to manage geotechnical challenges posed by Coode Island silt. In total, we excavated more than 350,000 cubic metres of spoil across both project sites.

As a key member of the Multiplex led project team, our civil works programme was a critical element in achieving a 6 Green Star environmental rating – a world first - for the Melbourne Convention Centre. Other key achievements included:

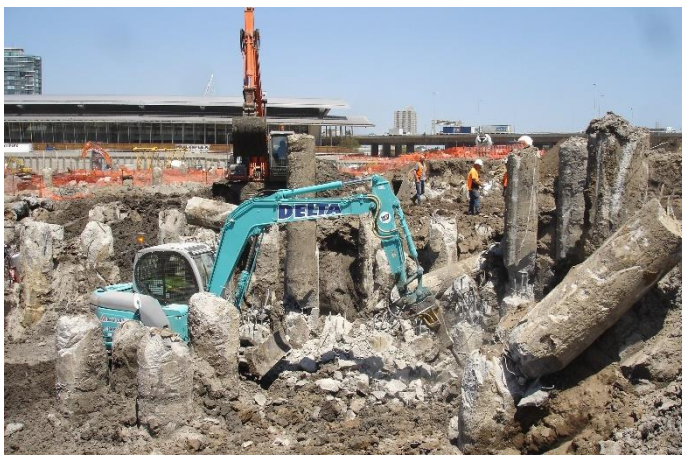
- Excavation of 350,000 cubic metres of Coode Island Silt and contaminated spoil.

- Construction of 3,000 sqm of shotcrete batters.
- 1,200 piles, including trimming, as well as more than 600 pile caps and 13 lift rats.
- 35,000 sqm of slab preparation.
- Construction of a 550 lineal metre flood wall and 3,000m of basement stormwater drainage.
- Full site (and soil) remediation.





## Melbourne Convention Centre & South Wharf





# KEY PROJECTS

## Western Sydney Stadium

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Project	New Stadium Development
Client	Lendlease
Sector	Urban, Public Infrastructure
Location	Suburban Sydney

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Services provided:



Demolition



Recycling



Environmental



Civil



Asbestos





# Western Sydney Stadium

Lendlease contracted Delta Group to design and deliver an integrated project management solution for the \$330m redevelopment of Parramatta Stadium in Western Sydney.

Our scope of works included:

- Site set up, including amenities, materials hoist, gantries and full height perimeter scaffold.
- Demolition of existing structures down to basement levels, including two concrete grandstands, concourse, amenities and offices, six steel light towers, as well as an adjacent Olympic Swimming & Diving Complex (and diving tower).
- Bulk/detailed excavation works, including the construction of reinforced concrete foundations, retention systems, lift core rafts and ground slabs.
- Removal and remediation of asbestos contaminated soil.
- Emission, noise and vibration controls.
- Transport logistics - including contaminated materials tracking and licensed vehicles as well as traffic management and supervision.
- Recycling of construction waste materials.
- Specialist services – archaeological studies, aborist and tree removal.

A meticulously planned and integrated works programme was designed to successfully complete all works on time, on budget and without incident, involving a series of unique civil construction challenges and achievements:

- Construction of a containment cell in 300mm layers - down to 4m - to achieve the required compaction for pile mat and slabs. Due to contaminated soil, the containment cell was built up and covered in orange geofabric. This process was repeated with clean fill to ensure compaction over the entire surface area

- Sequence changes to accommodate the archaeological study allowed the installation of piles to commence as per the agreed works programme. This also led to the management of up to five multiple workfronts.
- Bulk excavation of 88,000 cubic metres - 48,000 cubic metres of contaminated spoil plus 40,000 cubic metres of cleanfill.
- 25,000 sqm of pile mat – comprising 300mm sandstone and 100mm crushed concrete.
- 9,000 cubic metres of crane mat – comprising 500mm sandstone and 500mm crushed concrete.
- 700 trimmed piles.
- Detailed excavation of 9,000 cubic metres.
- FRP of 130 footings and 4 lift core bases.



# Western Sydney Stadium





Melbourne CBD  
6.5km

# KEY PROJECTS

## Amcor Paper Mill (YarraBend)

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Project	Industrial Plant Decommissioning
Client	Amcor Australasia
Sector	Industrial, Manufacturing
Location	Suburban Melbourne

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Services provided:



Demolition



Recycling



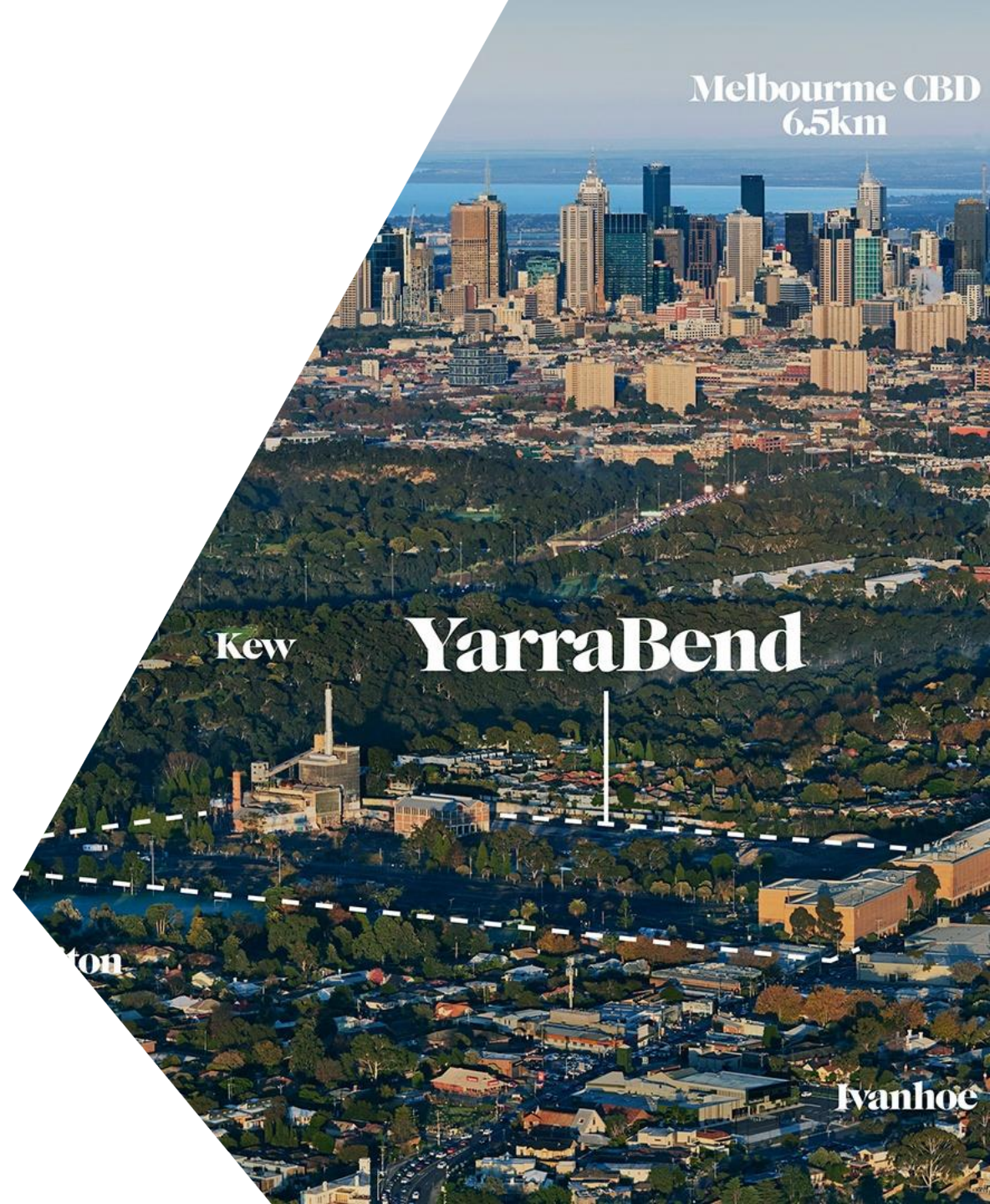
Environmental



Civil



Asbestos



## Amcor Paper Mill (YarraBend)

Amcor Australasia contracted Delta Group to complete major industrial demolition works as well as environmental remediation and rehabilitation of asbestos contaminated land to make way for an entirely new suburb of Melbourne - the \$2b Yarra Bend development that will involve more than 2,500 homes, 5,000 residents and leisure, retail and commercial amenities.

Our scope of works included:

- Demolition of existing structures, including an 83 metre concrete chimney stack, water treatment plant, multi-level processing plant, above/below ground tanks and silos, and deconstruction of the slab, basements and tunnels throughout the 16.5 hectare site.
- Retention of (future) heritage listed structures, such as the 1954 Boiler House.
- Recycling of uncontaminated construction materials, including timber, concrete and ferrous/non-ferrous metals – as well as onsite concrete and brick crushing facilities.

- Removal of friable and non-friable asbestos, including remediation and rehabilitation of contaminated soil.

We mobilised a fleet of large excavators and associated plant to complete demolition works across the 40 acre site, including specialised long reach attachments, hydraulic shears and a hydraulic pulveriser attached to a crane to deconstruct the chimney stack.

A significant and heavily scrutinised challenge was to remediate and rehabilitate asbestos contaminated materials and soil, including:

- 40,000 cubic metres of non-friable (bonded) asbestos, predominantly from asbestos cement roof sheeting.
- 100 cubic metres of friable asbestos.

We worked with an independent hygienist who was commissioned to direct our remediation and rehabilitation work, as well as to ensure all appropriate OHS protocols were met – in accordance with the requirements of the City of Yarra (local council) and Victorian Environment Protection Authority.

As part of our recycling works programme, non-contaminated concrete and brick materials were crushed onsite.

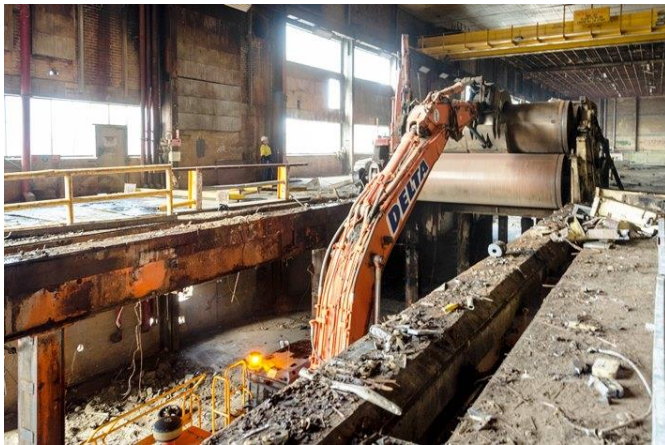


## Amcor Paper Mill (YarraBend)





## Amcor Paper Mill (YarraBend)





# KEY PROJECTS

## Central Park Sydney

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Project	Old CUB Brewery Redevelopment
Client	Frasers Broadway
Sector	Urban, Residential
Location	Inner Suburban Sydney

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Services provided:



Demolition



Recycling



Environmental



Civil



Asbestos



# Central Park Sydney

Frasers Broadway contracted Delta Group to design and deliver an integrated demolition and civil construction works programme for the \$2b Central Park redevelopment.

The scope of works included:

- Site set up and preparation, including amenities, materials hoist, gantries and full height perimeter scaffold.
- Demolition of multiple existing structures down to basement levels, including the protection of heritage listed buildings and adjoining structures.
- Bulk/detailed excavation works, including the construction of reinforced concrete foundations, retention systems, lift core rafts and ground slabs.
- Remediation of contaminated soil.
- Construction of crane and Alimak bases.
- Emission, noise and vibration controls.
- Transport logistics, including traffic management and supervision.

- Recycling of construction waste materials.
- Remove of asbestos and hazardous waste.

All stages of our integrated demolition and civil works programme were required to satisfy the strict requirements of the Green Star environmental rating and to support a 5 Green Star rating – the largest multi-residential building in Australia to achieve this certification.

We were also able to successfully undertake major demolition and civil excavation works in a constrained, high density without disruption to neighbouring residential communities, major arterial transport thoroughfares, or commercial business, retail and hospitality operations.

Other key achievements included:

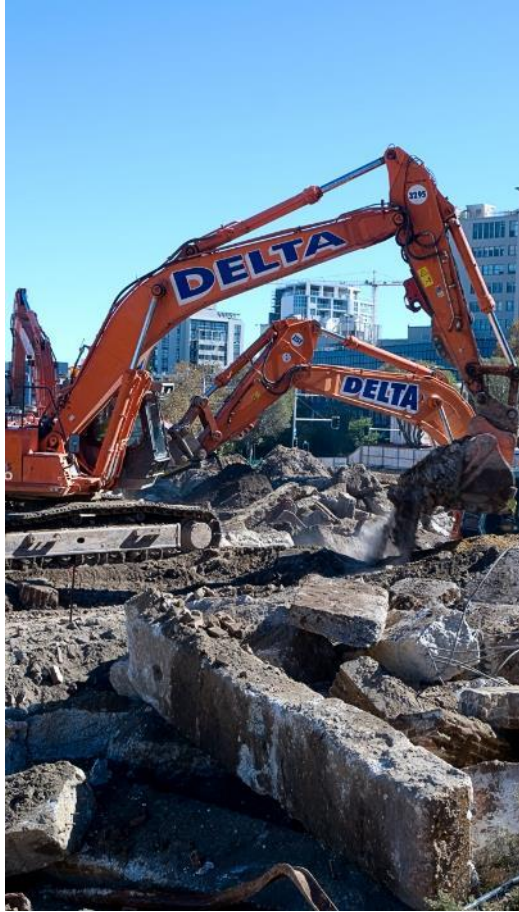
- Excavation of more than 390,000 cubic metres of spoil for a 10 level basement structure.
- Design and construction of more than 500 metres of piling retention systems.
- Testing, analysis and remediation of asbestos contaminated soil.

Our efforts were also recognised as part of the World Green Infrastructure Award which the development received in 2014.





## Central Park Sydney





## Central Park Sydney





# KEY PROJECTS

## Lady Cilento Children's Hospital

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Project	Queensland Children's Hospital Redevelopment
Client	Abigroup
Sector	Urban, Health
Location	CBD Brisbane

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Services provided:



Civil



Asbestos



Demolition



Environmental



# Lady Cilento Hospital

Abigroup contracted Delta Group to design and deliver a large scale civil construction works program in Brisbane CBD for the **\$700m redevelopment of the Queensland Children's Hospital**.

Our scope of works included:

- Demolition of existing 6 storey car park down to basement level.
- Bulk/detailed excavation works allowing for the construction of reinforced concrete foundations.
- Concrete infrastructure – slab preparation and construction, retention systems and lift core rafts.
- Construction of crane bases.
- Emissions, noise and vibration controls.
- Transport logistics, including traffic management and supervision.
- Site infrastructure - basement stormwater drainage systems.
- Site dewatering.
- Remediation of contaminated land.

With a site footprint covering 15.6 hectares the Lady Cilento Hospital redevelopment **was one of Brisbane's largest**. Key achievements included:

- Bulk excavation of more than 170,00 cubic metres of spoil.
- 1,500 sqm of detailed earthworks.
- Spraying 7,000 sqm of shotcrete.
- 400 piles.
- 1,500 ground anchors.
- Capture and removal of more than 20,000t of contaminated material.





# Lady Cilento Hospital





# KEY PROJECTS

## BHP Yandi Mine

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Project	Industrial Demolition, Salvage & Remediation
Client	Debtech
Sector	Industrial, Manufacturing
Location	Regional WA

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Services provided:



Demolition



Recycling



Environmental





# BHP Yandi Mine

BHP contracted Delta Group to design and deliver a complex works program to demolish a 200m long Interim Crushing Plant at their Yandi Mine in the Pilbara region of Western Australia.

Our scope of works included:

- Asset recovery and salvage – CR302 Secondary Cone Crusher, Exciters from all screens and CR301 Cover Motor.
- Demolition of Receival Hopper, Primary Crusher Plant, ROM Bin, Conveyors, Scalping Screen, Secondary & Tertiary Crushing Plant, Screen House and Control Rooms – down to ground level and including concrete ground slabs.
- Protect and retain transformer.
- Emissions, noise and vibration controls.
- Site remediation– including onsite crushing and reuse of concrete slab and footings down to 1.5m.

As a result of our innovative works programme and effective recycling alternatives, BHP was able to reduce the cost of a new Crusher Mantle by 50%.

Our successful site remediation works involved more than 2,000t of recycled concrete crushed to specification and reused for backfill.

The entire site was then formed to allow safe access and drainage.

The project was completed on time, on budget and without incident.

BHP recognised our work with a prestigious HSEC Award for excellence in Environmental Management. In particular our innovative techniques to manage and divert waste from landfill.

**BHP** 2017 WA Iron Ore Contractor HSEC Award  
Environment



## BHP Yandi Mine





# KEY PROJECTS

## Parker Point Bulk Fuel Terminal

Project	Industrial Demolition & Remediation
Client	Rio Tinto
Sector	Industrial, Chemical & Petroleum
Location	Suburban Perth

Services provided:



Demolition



Recycling



Asbestos



Environmental



# Parker Point Bulk Fuel Terminal

Rio Tinto engaged CMA Contracting (a Delta Group company) to design and deliver major industrial demolition and environmental management services at its Cape Lambert and Parker Point facilities near Karratha, Western Australia.

Our scope of works included:

- Demolition of existing steel bulk fuel storage tanks, water tanks, workshop building, walkways, pipework and minor plant structures down to foundation levels.
- Emissions, noise and vibration controls.
- Protection of adjacent structures, including hoardings/barricades.
- Remediation and rehabilitation of contaminated soil.
- Transport logistics, including traffic management and supervision.
- Recycling of construction waste materials.
- Removal of asbestos and hazardous waste.

We successfully deconstructed the tank farms and associated structures using specialised plant and equipment, including excavators and precision shear attachments to peel/fold each tank before processing the scrap steel onsite.

The foundations were broken down using excavators with hammer attachments and buckets, before loading waste onto articulated trucks for offsite disposal.

Once our demolition works were complete, we undertook remediation and rehabilitation of 22,000 cubic metres of contaminated soil, including:

- Analytical sampling and testing – indicating large volumes of hydrocarbon impacted soil.
- Soil classification and excavation, including transport to licensed landfill facilities.
- Removal of soil underneath demolished tanks – from 0.3m to 1.0m – ensuring stable cut faces as well as the set out and placement of protective measures/barricades to eliminate cross-contamination.
- Drainage of bund area followed by the placement of engineered fill in 200mm layers, including restoration of soil contours back to original levels.



# Parker Point Bulk Fuel Terminal



# KEY PROJECTS

## Woodsreef Mine

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Project	Industrial Deconstruction & Remediation
Client	NSW Government
Sector	Industrial, Manufacturing
Location	Regional NSW

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Services provided:



Demolition



Recycling



Environmental



Civil



Asbestos





# Woodsreef Mine

The NSW Department of Public Works contracted Delta Group to complete an industrial scale project for the deconstruction of the derelict Woodsreef Mine, including the full remediation of asbestos contaminated land.

Our scope of works included:

- Demolition of existing structures – 8 storey mill house, silos and administration building – down to ground level, including blast and mechanical methodologies.
- Identification, management and removal of stockpiled asbestos and hazardous waste materials, including burial of contaminated demolition waste and materials.
- Bulk excavation and construction of 12,000 cubic metre containment cell.
- Key stakeholder consultation and engagement – multi agency State and Local Government Committee, Commonwealth Department of Environment, residents, businesses and land-users.
- Integration of third party assessment studies and plans to address threatened fauna species.

- Cooperation with third party consultancies to undertake assessments and to monitor and manage air and health risks.
- Site remediation.
- Emissions, noise and vibration controls.
- Transport logistics, including traffic management and supervision.
- Site security.

Covering 400 hectares and involving a 75 million tonne waste rock dump, a 25 million tonne tailings dump and open pits with significant volumes of water, the scope and scale of our integrated works programme was complex.

In order to satisfy an urgent timeframe we undertook concurrent structural demolition works alongside stringent materials handling and load out requirements to complete the deconstruction 8 weeks ahead of schedule and within budget.

All demolition works were carried out in accordance with Work Health & Safety Act and Environmental Management Plans in consultation with WorkCover NSW and the Environmental Protection Authority (EPA).

There were no safety incidents and a comprehensive air monitoring program was undertaken by an Independent Licensed Asbestos Assessor.

The derelict buildings and infrastructure were demolished and buried on site within an EPA approved engineered containment cell. Revisions of the size of the cell were completed as a result of greater than forecast volumes of contaminated waste.

We are also able to identify some structural steel from within the Mill Building for recycling, following a decontamination process which was verified by the Independent Licensed Asbestos Assessor.

## Woodsreef Mine





# KEY PROJECTS

## Yarloop Bushfires

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Project	Asbestos Remediation & Rehabilitation
Client	Toxfree Solutions
Sector	Urban, Public Infrastructure
Location	Regional WA

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Services provided:



**Demolition**



**Asbestos**



**Environmental**



# Yarloop Bushfires

Delta Group was contracted by Toxfree Solutions to complete demolition and asbestos remediation works following the devastating Yarloop bushfires that destroyed more than 120 properties and 70,000 hectares of forest. The intensity of the fires caused bonded asbestos fences to explode, showering the township with asbestos fragments which were then spread by the fire.

Our scope of works included:

- Contaminated site surveys, testing, analysis and remediation – sampling, identification, excavation and removal, containment and compaction, bioremediation and in-situ stabilisation.
- Personal protective equipment, measures and techniques for the safe identification and removal of contaminated soil, building materials and debris.
- Removal, temporary storage and licensed transport of contaminate waste to approved facilities.
- Installation of HAZMAT hygiene facilities.
- Demolition of fire damaged and structurally compromised properties.

With the WA Government and Local Council barricading the township and impacted sites to block public access, we engaged eight crews to work systemically into the centre of Yarloop.

Due to the intense volatility of asbestos fallout, we assumed all debris and topsoil was contaminated as a result of the wide use of bonded asbestos fencing and extensive spread of asbestos fibres.

A key challenge was to maintain continuous and close consultations with a range of stakeholders so we could complete urgent works as well as maintain safe access to what remained of the township.

The sequencing and programming of our remediation works was critical, with site security personnel positioned at every road entrance to prevent unauthorised access.

Once all of the contaminated debris was safely removed, each site was tested, cleared and validated before temporary barricades were removed and the area reopened to the public.

Our work was completed within the 12 week timeframe without incident and with a total of 223 sites fully remediated and/or demolished.

Full public access to Yarloop was restored by the WA Government seven months after the bushfires.



## Yarloop Bushfires





# KEY PROJECTS

## Kwinana Power Station

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Project	Industrial Demolition
Client	Verve Energy
Sector	Industrial, Energy
Location	Suburban Perth

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Services provided:



Demolition



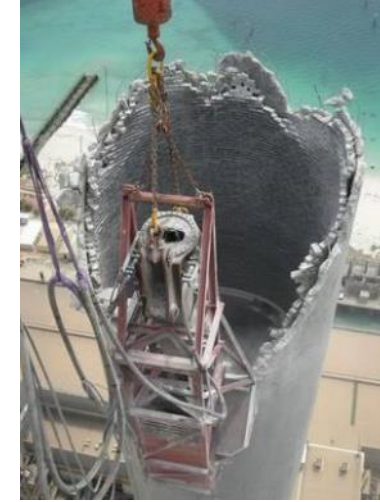
Recycling



Asbestos



Environmental





# Kwinana Power Station

Verve Energy engaged CMA Contracting (a Delta Group company) to complete major industrial demolition and remediation works at its Kwinana Power Station in suburban Perth.

- Demolition of existing 140 metre chimney stack and adjacent boiler house structure down to foundation levels – limited to a footprint of 100m x 70m and including a 50m x 60m exclusion zone at the base of the stack.
- Engineering study, including simulation and modelling for proposed deconstruction methodology.
- Emissions, noise and vibration controls to protect adjacent structures and operating plant/assets.
- Remediation and rehabilitation of contaminated soil - including 95% MMDD and 300mm thick limestone layer.
- Transport logistics, including traffic management and supervision.
- Recycling of construction waste materials.

Our custom designed, in-house demolition works programme was the first of its kind in Australia and involved a partnership with MB-Abbruchtechnik to fabricate specialised machinery that could deconstruct the stack **‘top-down’ whilst achieving strict emissions,** noise and vibration controls. Our solution centred on a shear with a kibble slung from a tower crane attached to the side of the stack and dropping all debris into the kibble or down the centre of the stack.

The second stage of our programme involved an induced collapse of the boiler house structure following the safe removal of large volumes of friable asbestos. Our programme design also took into consideration an adjacent turbine hall structure that was protected by a temporary framework of steel columns and cross-braces as well as concrete footings.

The computer modelling and simulation techniques we adopted allowed us to predict how the structure would behave in the initial stationary position and throughout the induced collapse.

**Following a successful ‘drop’ we processed** and recycled more than 3,000t of construction waste materials before undertaking the remediation and rehabilitation of contaminated soil:

- Analytical sampling and testing.
- Soil classification and excavation, including the removal of footings and soil underneath boiler house and chimney stack structures – down to 2.5m - and transport to licensed landfill facilities.
- Site drainage, set out and placement of engineered fill.

# CONTACT US

for your next project.

577 Plummer Street  
Port Melbourne VIC 3207

Ph: 03 9646 8277

info@grangeenvironmental.com.au  
**GRANGEENVIRONMENTAL.COM.AU**

