

Rail

# DRIVING PROGRESS







# DRIVING PROGRESS

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# McCONNELL DOWELL'S COMPLETE RAIL SERVICE

From the earthworks to the passenger facilities, we offer a complete rail design and construction service that minimises your interface risks and delivers a seamless project solution.

Beyond the construction of the asset, we also have the rail maintenance and asset management knowledge and systems to extend your network’s lifespan.



### Stations and Facilities

We build stations, car parks, footbridges and pedestrian underpasses using our own teams and in partnership with our sister company Built Environs



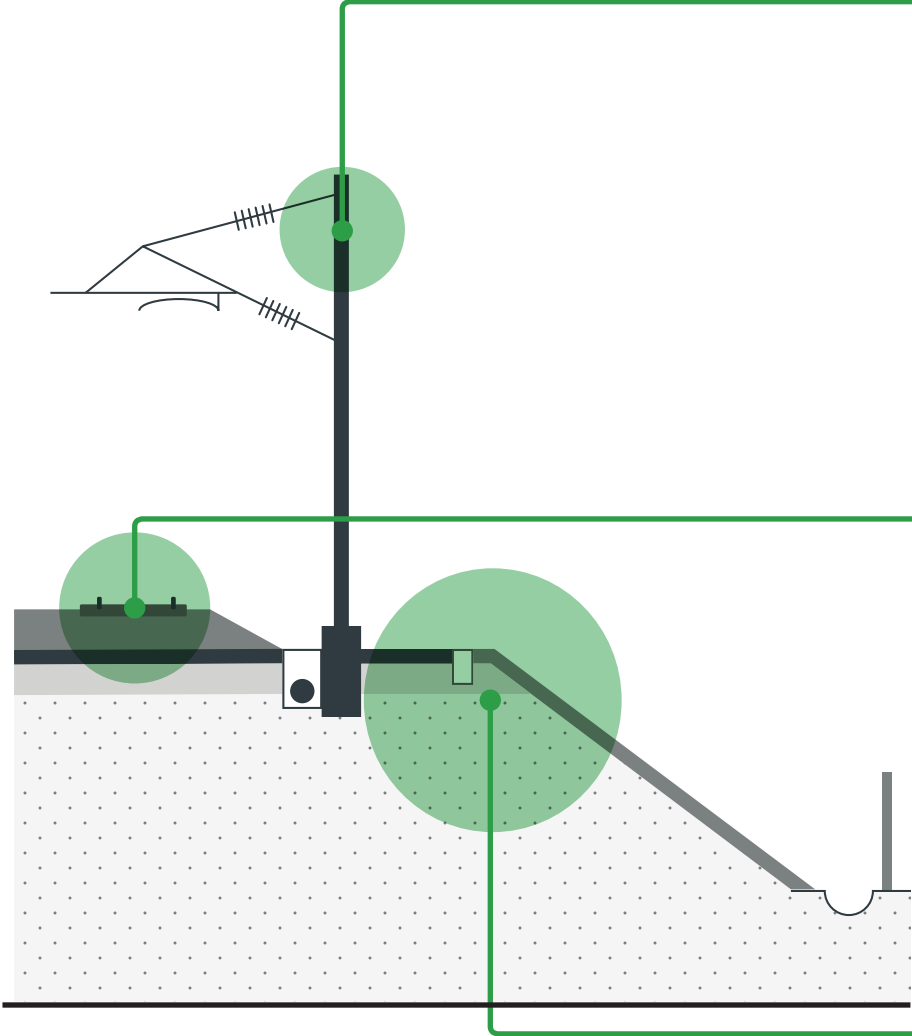
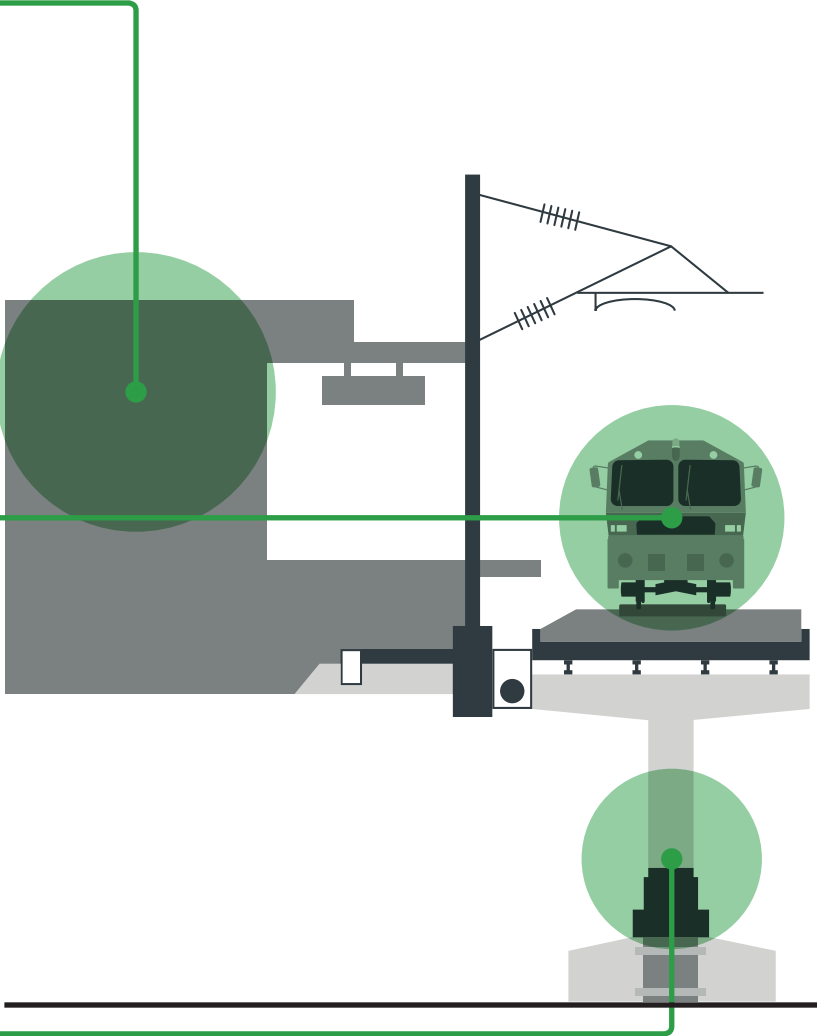
### Rollingstock Operator

We hold Rail Safety Accreditation as a Rolling Stock Operator across Australia and are an Authorised Engineering Organisation (AEO)



### Rail Bridges and Tunnels

Complex civil structures are our speciality and we use every type of construction method to minimise rail and road disruption



### Energisation and signalling

Delivery of these critical assets are managed by our experienced supervisors and delivered with specialist subcontract partners



### Track Construction and Maintenance

With a large fleet of our own rail plant, we deliver and maintain track and sleepers in every gauge and thickness



### Earthworks, Formations and Drainage

We build quality foundations and formations to support every type of rollingstock

## Our Rail Plant Fleet

(see page 26–27 for detailed plant specifications)



#### Tampers

- Plasser
- Pandrol Jackson



#### Regulators

- Knox Kershaw
- Kershaw
- Harsco



#### Compactors

- Tamper Crib & Shoulder Compactor



#### Flashbutt Welders

- VaiaCar
- Doosan



# PASSENGER RAIL

**As a passenger rail construction and maintenance expert, we know how to minimise disruption and deliver safe, high quality projects on time.**

We're used to managing tight occupation possession windows and working within constrained rail corridors to deliver new passenger rail infrastructure or renew existing assets, safely and with zero unplanned impact.

We've used every type of construction method to minimise disruption. From pushing, lifting or driving new rail bridges into place over short occupations, to sliding a new station roof above live tracks. We know how to create, innovate and manage projects to minimise disruption.

From the bottom of the pit to the top of the station roof, critical interfaces are integrated, controlled and delivered through our experienced project teams. Our strong project engineering, management and planning systems form the backbone of our multi-disciplinary approach.

Our passenger rail project capabilities are showcased in the case studies that follow.

Oaklands Rail Crossing Grade Separation, South Australia





Victoria

# Western Program Alliance Level Crossing Removals



McConnell Dowell is the constructor within the Western Program Alliance, part of the Victorian State government's ambitious level crossing removal program.

The Alliance brings together the Level Crossing Removal Project, MTM (network operator), and Arup and Mott Macdonald as design partners.

In its first two years, the Alliance successfully completed three level crossing removals in Melbourne's western and south eastern suburbs, namely:

- Kororoit Creek Road in Williamstown North – a rail over road bridge and duplication of 800 metres of track on the Altona Loop
- Abbots Road in Dandenong South – a rail over road bridge in an industrial zone
- Aviation Road in Laverton – a rail over road bridge within a busy shopping precinct.

Due to their excellent delivery performance, the Alliance was also awarded and completed the design and construction of a new train stabling facility in Wyndham Vale for V/Line (profiled on page 9).

The Alliance is now focused on delivering the next three level crossings between Werribee and Hoppers Crossing, and on the Cranbourne Line Upgrade in Melbourne's south east. The latter project involves multiple level crossings, signalling works and 8 km of track duplication.

Alliance contract
Multiple level crossing removals
Complex occupations/possessions management

Victoria

# Wyndham Vale Train Stabling Facility



Under the Western Program Alliance, McConnell Dowell constructed the Wyndham Vale Train Stabling Facility, in Melbourne's West.

The 3km long site includes four tracks (roads) each capable of stabling two 6 carriage V/Line diesel velocity trains. The facility allows for the trains to be refuelled and cleaned and also includes multiple buildings for staff amenities, security and network equipment.

McConnell Dowell laid 3,500m of track and installed overhead gantries for the future planned electrification of the line.

Connection to the mainline involved the widening of an existing cutting through basalt rock adjacent to the operating network. Construction took three months with zero impact to train operations. The connection to the mainline consists of eight new turnouts that were 'stick built' over a six day occupation/possession.

In an Australian first for a regional passenger line, 120 recycled plastic sleepers were installed within the facility to trial their performance. The sleepers are manufactured in Mildura, Victoria and are the only composite sleepers manufactured locally.

Alliance contract
3km long site
3.5km of track laid



OUR PROJECTS

New Zealand  
**City Rail Link – Contract 2**



McConnell Dowell is half of ‘Connectus’, a JV responsible for delivering the City Rail Link (CRL) Contract 2. Procured under an Early Contractor Involvement (ECI) model, the contract is an early works package for the overall NZ\$3.4 billion CRL project.

Delivered in the Auckland CBD, the works include:

- 350m of cut and cover tunnels, up to 18m deep, under Albert Street between Customs Street and Wyndham Street, and reinstating the streetscape on completion
- pipejacking 516m of new stormwater main along the eastern side of Albert Street, between Swanson Street and Wellesley Street, and strengthening 40m of the Orakei Main Sewer beneath Victoria Street.

A key challenge of the project was the relocation and protection of public utility services including 700m of communication cables, 550m of electricity cables, 200m of gas lines, 450m of water/waste water pipelines, and 1,000m of stormwater pipelines. Success demanded complex traffic management, intricate construction staging and extensive third-party consent coordination.

350m Trench in Alberta St
4 Shafts
362 Piles
250 Services
2016 ISCA ‘Leading’ Infrastructure Sustainability Design Rating

New Zealand  
**Puhinui Interchange**



**Built Environs**



A McConnell Dowell and Built Environs joint venture is designing and delivering the new Puhinui Station Interchange, in Auckland New Zealand.

The new Interchange is a key component of the Southwest Gateway Programme, which will enhance public transport connectivity between Auckland Airport and the CBD.

The interchange will build on the existing train station, linking the rail platform with a new bus and ‘kiss and ride’ area via a new elevated concourse. The concourse will be accessible via stairs, lifts and escalators.

Also included will be:

- ticketing, staff and retail facilities
- shared path connections, cycle storage racks, and separated crossings adjacent to the station
- a continued east-west crossing for pedestrians not using the railway station.

The first stage of construction involved demolishing the existing Puhinui Station footbridge. With safety as their focus, the team developed a clever staged solution that allowed works to be safely performed over the live tracks and around the electrified lines in the rail corridor. Over 350 tonnes of concrete was successfully removed during the controlled demolition.

Working over live rail lines
First protection shield over live tracks in New Zealand



OUR PROJECTS

South Australia  
**Oaklands Rail Crossing  
Grade Separation**



Alliance contract
Rail under road solution
New station construction
Major service relocation

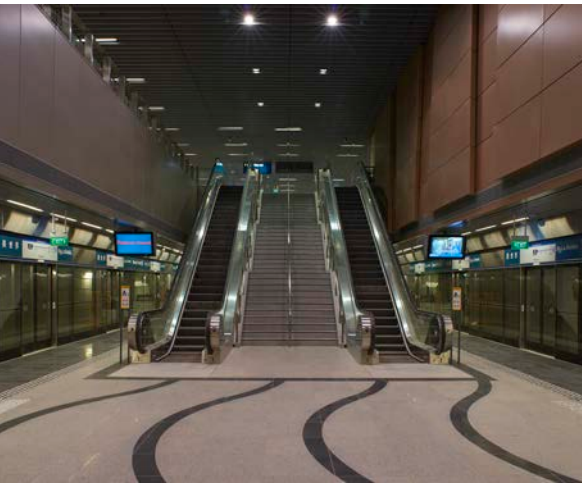
In an alliance with the Department of Planning, Transport and Infrastructure (DPTI), Mott MacDonald and Arup, McConnell Dowell successfully removed the Oaklands Rail Crossing, 13km south of Adelaide.

- At the intersection of two busy arterial roads and within a suburban shopping precinct, the project involved:
- the full range of rail engineering disciplines including track, signalling and communication, electrification, stations and crossings
  - design and construction of major earthworks, drainage, roadworks and bridgeworks on a major arterial route. Over 10,000m<sup>3</sup> of contaminated material was carefully managed
  - design and construction of service relocations in coordination with utility companies APA, SA Power Networks, SA Water, Telstra and NBN.

Careful planning, smart construction staging, and proactive stakeholder engagement were critical to success. Creation of a fully detailed 3D model of existing and future structures was critical to constructing and commissioning the new infrastructure with minimal impact to rail operations.

At the end of the project, stakeholder satisfaction was measured as ‘Exceptional’.

Singapore  
**Singapore Rail Tunnels  
(C916 & C917)**



Design & Construct contract
4km of 5.8km diameter tunnels
Complete underground station construction

The Singapore Land Transport Authority (LTA) awarded McConnell Dowell two design and construct contracts: the new Beauty World Mass Rapid Transit (MRT) underground station and its associated tunnels (C916); and the Downtown Line 2 comprising two stations and associated dual tunnels (C917).

- The C916 contract scope of work comprised design and construction of:
- twin tunnels each of 1.1km in length with an internal diameter of 5.8m
  - two cross passages with deep sump pit chambers and 135m of cut and cover tunnels, serving as a cross-over box
  - a new underground station including station entrances, subway links, architectural finishes and external landscaping. The station now doubles as a civil defence shelter.

- The C917 contract scope of work comprised design and construction of:
- two underground stations at Sixth Avenue and King Albert Park. Each station box measures 190m long and up to 80m wide
  - twin tunnels run between the stations, directly beneath busy Bukit Timah Road.

The projects were successfully delivered under significant public and government scrutiny due to prior contractor issues.



# LIGHT RAIL

**From the city-changing first stage of the Gold Coast Light Rail, to the renewal of Adelaide's iconic Glenelg Tram, we've delivered every type of infrastructure asset in light rail.**

We have effectively managed the many complexities that come with inner urban light rail developments, including relocating public utility services, managing and maintaining traffic flows and minimising the impact of construction on local businesses.

In partnership with our architects we've designed light rail stations that integrate seamlessly into the urban streetscape and constructed state-of-the-art maintenance depots to support the latest light rail vehicle fleets.

Our integrated approach to light rail ensures compatibility of the systems, compliance with the project specification and co-ordination of every facet of delivery.

We apply our broad rail skills throughout all of the phases of a project, from feasibility studies and surveys, through outline and detailed designs to construction, testing and commissioning.

Our light rail project capabilities are showcased in the case studies that follow.





OUR PROJECTS

South Australia

City South Tram Line

Construct only contract
Inner city location
New tracks & tram stops



The City South Tram Line Replacement project in central Adelaide saw McConnell Dowell replace the existing tracks along King William Street between Victoria Square and South Terrace, and upgrade an existing tram stop. The corridor is now dedicated to trams, improving the reliability of the overall network.

Works included the demolition and replacement of the existing tracks and concrete slab, adjustments to the existing tram overhead wiring system, poles, road resurfacing and line marking, tree pruning and new landscaping.

The tram stop at the intersection of Sturt/Halifax Streets and King William Street was also replaced as part of the project. Works included the demolition of the existing tram stop and construction of new platforms, shelter, signage and platform furniture. The platforms are accessible via upgraded pedestrian crossings.

Input from local businesses and stakeholders helped inform the design and construction methodology and timing.

Queensland

Gold Coast Light Rail

PPP contract
13km track
16 stations
State-of-the-art maintenance depot



The Gold Coast Light Rail, Queensland's first light rail system, is a city-changing piece of infrastructure that integrates new and existing transport systems in Australia's tourist mecca.

McConnell Dowell was part of the joint venture responsible for delivering stage one of the system over three years from mid-2011. The scope included the financing, design, construction, operations and maintenance of 13km of track, 16 stations, 14 vehicles, all rail systems and signalling, and a state-of-the-art maintenance depot.

Opened in mid-2014, our system is on track to carry 75,000 passengers per year bringing new mobility and access to one of the fastest growing regions of Australia.





# HEAVY RAIL

**From the Pilbara to the Hunter Valley, our heavy rail track record includes greenfield and brownfield developments and maintenance.**

We have designed and built complete track systems for the likes of Fortescue Metals Group and provided ongoing maintenance and renewal services to ARTC.

Effective and efficient planning and logistics are crucial to getting the job done in these often remote locations. We carry out detailed staging and comprehensive risk assessments and work rigorously to minimise the impacts of project delivery on rail operations.

Underpinning all of this is our capacity to integrate everything into one seamless heavy rail solution, eliminating interfaces and providing our heavy rail clients with surety of time, cost and quality.

Our heavy rail project capabilities are showcased in the case studies that follow.





OUR PROJECTS

Western Australia

FMG Mainline Upgrade and Solomon Spur



This heavy rail construction project was part of Fortescue Metals Group’s (FMG) Capacity Expansion Project in the Pilbara, designed to increase iron ore export capacity to 155 million tonnes per annum.

McConnell Dowell’s scope of work included the construction of approximately 300km of new track and 100 turnouts; along with partial duplication of the existing FMG mainline.

The work was executed in a “brownfield” environment adjacent to and interfacing with the busy live mainline. Several new turnouts were installed into the operational mainline under possession.

The balance of the scope of work was the construction of the new Solomon Spur (later renamed the Hamersley Line).

The Solomon Spur was a 126 km “greenfield” project with crossing loops and a loading loop at the Firetail mine. The new spur connects to the existing mainline approximately 180 km from Port Hedland.

Key quantities for the two projects included:

- 155km duplication of existing line
- 145km spur line
- 107 turnouts.

Construct only contract
300km of standard gauge heavy haul track
839,700,000 tonnes of ballast
446,219 No. sleepers

Victoria

Murray Basin Rail Project



The Murray Basin Rail Project for V/Line was one of the largest rail freight upgrade projects in Australia and involved the conversion of 1,055 kilometres of track to standard gauge.

The project was spread across 490km of Victoria’s central and north-west regions, with approximately 35 per cent of workforce residing in regional Victoria.

It was a fast-track project and in just over seven months our team:

- mobilised a peak workforce of 680 personnel
- placed 300,000 tonnes of ballast (including a shift record of 8,000 tonnes)
- replaced 80,000 timber sleepers (in two months)
- completed 22,000 rail welds (with a consistent daily average of over 480 welds per day)
- removed 37 turnouts
- installed 21 active level crossings and 250 gravel crossings.

Equally as important and impressive was the human and local community dimensions of the project. Over one million hours were worked without a lost time injury and over 15,000 hours was invested in training and development. \$16 million was invested in regional economies through “buy local” policies.

Construct only contract
Conversion of 490km of track
300,000 tonnes of ballast
22,000 rail welds



# RAIL PLANT SERVICES

**We maintain our own fleet of tampers, regulators, flash butt welders, hi-rail excavators, hi-rail ultrasonic vehicles, track and resleeper machines, rail grinding machines, ballast cleaners, locos and wagons.**

Our specialised rail plant is managed and supported by a team of highly mobile, flexible and competent operators, fitters, electricians, supervisors and work crews. We have an established training regime to guarantee the accreditation and safety of our employees and the local environment and communities in which we work.

Our rail plant yard and workshop provides a full suite of maintenance services for our rail plant and equipment fleet where ever it is needed.



McConnell Dowell's Rail Plant Yard, Sunshine North, Victoria



# SUNSHINE YARD



## CAPABILITIES

- Welding rail up to 165m strings
- Storage of rail plant/sets
- Storage of rail
- Load rail train (standard & broad)
- Long stay/ short stay/overnight stay
- Rail plant maintenance

## RAIL YARD

- 2 x 500m standard gauge tracks
- 2 x 600m broad gauge tracks
- 2 x gantry cranes
- 3 hectares storage space available

McConnell Dowell's rail plant yard is equipped with both standard and broad gauge tracks, the 650m long site has direct access to the mainlines of both the metropolitan and interstate networks.

The facility can provide safe and secure storage and materials handling services for freight operators, as well as assisting companies moving equipment and materials across the network for projects like Melbourne Metro and the level crossing removals program. Efficient and flexible materials handling is provided through two overhead gantry cranes.

The on-site workshop provides flashbutt welding services for long-welded rail, in addition to the full scope of rail plant asset management and maintenance services.





RAIL PLANT



Plasser 09-32 Mainline Tamper z025/082

<b>Machine:</b>	Mailine Tamper		<b>Model:</b>	09/32	<b>Year:</b>	1997	
<b>Length:</b>	20m	<b>Height:</b>	3.7m	<b>Width:</b>	2.87m	<b>Weight:</b>	64,000kg
<b>Work Speed:</b>	Front 16T, Rear 16T/axle			<b>Work Speed:</b>	1,600km/h		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	80km/h		
<b>Gauge:</b>	Std 1435mm, Brd 1600mm			<b>Tamping Tools:</b>	32		
<b>Lining Mechanism:</b>	ALC						
<b>Attachments:</b>	Match Wagon						

Pandrol Jackson 6700SI Tamper z025/081

<b>Machine:</b>	Switch/Mailine Tamper		<b>Model:</b>	6700SI	<b>Year:</b>	2009	
<b>Length:</b>	15.15m	<b>Height:</b>	3.58m	<b>Width:</b>	3.15m	<b>Weight:</b>	31,750kg
<b>Weight/Axle:</b>	Front 9.8T, Rear 22.2T/axle			<b>Work Speed:</b>	0.800km/h		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	72km/h		
<b>Gauge:</b>	Standard 1435mm			<b>Tamping Tools:</b>	16		
<b>Lining Mechanism:</b>	Light Reference System with AutoCurveliner						

Pandrol Jackson 6700 Tamper z025/083

<b>Machine:</b>	Switch/Mailine Tamper		<b>Model:</b>	6700SI	<b>Year:</b>	2009	
<b>Length:</b>	15.15m	<b>Height:</b>	3.58m	<b>Width:</b>	3.15m	<b>Weight:</b>	31,750kg
<b>Weight/Axle:</b>	Front 9.8T, Rear 22.2T/axle			<b>Work Speed:</b>	0.800km/h		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	72km/h		
<b>Gauge:</b>	Std 1435mm, Brd 1600mm			<b>Tamping Tools:</b>	16		
<b>Lining Mechanism:</b>	Light Reference System with AutoCurveliner						

Pandrol Jackson 6700SJ Jupiter Tamper z025/085

<b>Machine:</b>	Switch/Mailine Tamper		<b>Model:</b>	6700SJ Jupiter	<b>Year:</b>	2009	
<b>Length:</b>	15.15m	<b>Height:</b>	3.58m	<b>Width:</b>	3.15m	<b>Weight:</b>	31,750kg
<b>Weight/Axle:</b>	Front 9.8T, Rear 22.2T/axle			<b>Work Speed:</b>	0.800km/h		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	72km/h		
<b>Gauge:</b>	Std 1435mm, Brd 1600mm			<b>Tamping Tools:</b>	16		
<b>Lining Mechanism:</b>	Light Reference System with Jupiter System						

Knox Kershaw KBR 925 Regulator z025/104

<b>Machine:</b>	Ballast Regulator			<b>Model:</b>	KBR 925	<b>Year:</b>	2009
<b>Length:</b>	11.58m	<b>Height:</b>	3.35m	<b>Width:</b>	3.22m	<b>Weight:</b>	20,430kg
<b>Weight/Axle:</b>	Front 10T, Rear 10T/axle			<b>Work Speed:</b>	25km/h		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	56km/h		
<b>Gauge:</b>	Std 1435mm, Brd 1600mm						
<b>Attachments:</b>	Broom, X plough assembly, Articulated wing on box assembly						

Kershaw 46-2 Regulator z025/100 & z025/101

<b>Machine:</b>	Ballast Regulator		<b>Model:</b>	BE-AD	<b>Year:</b>	2005	
<b>Length:</b>	11.1m	<b>Height:</b>	3.175m	<b>Width:</b>	3.175m	<b>Weight:</b>	17,690kg
<b>Weight/Axle:</b>	Front 8.7T, Rear 10.4T/axle			<b>Work Speed:</b>	25km/h		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	48km/h (low range) 80km/h (high range)		
<b>Gauge:</b>	Std 1435mm & Brd 1600mm						
<b>Attachments:</b>	Broom, X plough assembly, Articulated wing on box assembly						

Harsco BE-AD z025/103

<b>Machine:</b>	Ballast Regulator			<b>Model:</b>	BE-AD	<b>Year:</b>	2009
<b>Length:</b>	9.6m	<b>Height:</b>	3.3m	<b>Width:</b>	3.14m	<b>Weight:</b>	20,500kg
<b>Weight/Axle:</b>	Front 9.1T, Rear 11.4T/axle			<b>Work Speed:</b>	25km/h		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	30-35km/h (low range) 75-80km/h (high range)		
<b>Gauge:</b>	Std 1435mm, Brd 1600mm						
<b>Attachments:</b>	Broom, X plough assembly, Articulated wing on box assembly						

VaiaCar Mobile Flashbutt Welder z025/061 & z025/062

<b>Machine:</b>	Mobile Flashbutt Welder		<b>Model:</b>	K355	<b>Year:</b>	2006	
<b>Length:</b>	7.56m	<b>Height:</b>	3m (rd)/3.25m (rail)	<b>Width:</b>	2.48m	<b>Weight:</b>	23,200kg
<b>Weight/Axle:</b>	Front-9.6T, Rear 13.6T/axle			<b>Welding Head Weight:</b>	3000kg		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	35km/h on road 47km/h on rail		
<b>Gauge:</b>	Std 1435mm			<b>Drive:</b>	Hydrostatic 4wd		
<b>Engine:</b>	Deutz 6 Cylinder Direct Injection						

Holland H-1200/ Doosan ATMW z025/060 Mobile Flashbutt Welder

<b>Machine:</b>	Mobile Flashbutt Welder		<b>Model:</b>	ATMW	<b>Year:</b>	2009	
<b>Length:</b>	10.7m	<b>Height:</b>	4m	<b>Width:</b>	2.7m	<b>Weight:</b>	38,000kg
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	21km/h		
<b>Gauge:</b>	Convertible			<b>Weld Process:</b>	Flash and Pulse		
			<b>Productivity:</b>	Flash - Up to 6 per hour Pulse - Up to 8 per hour			

Tamper Crib & Shoulder Compactor z025/408

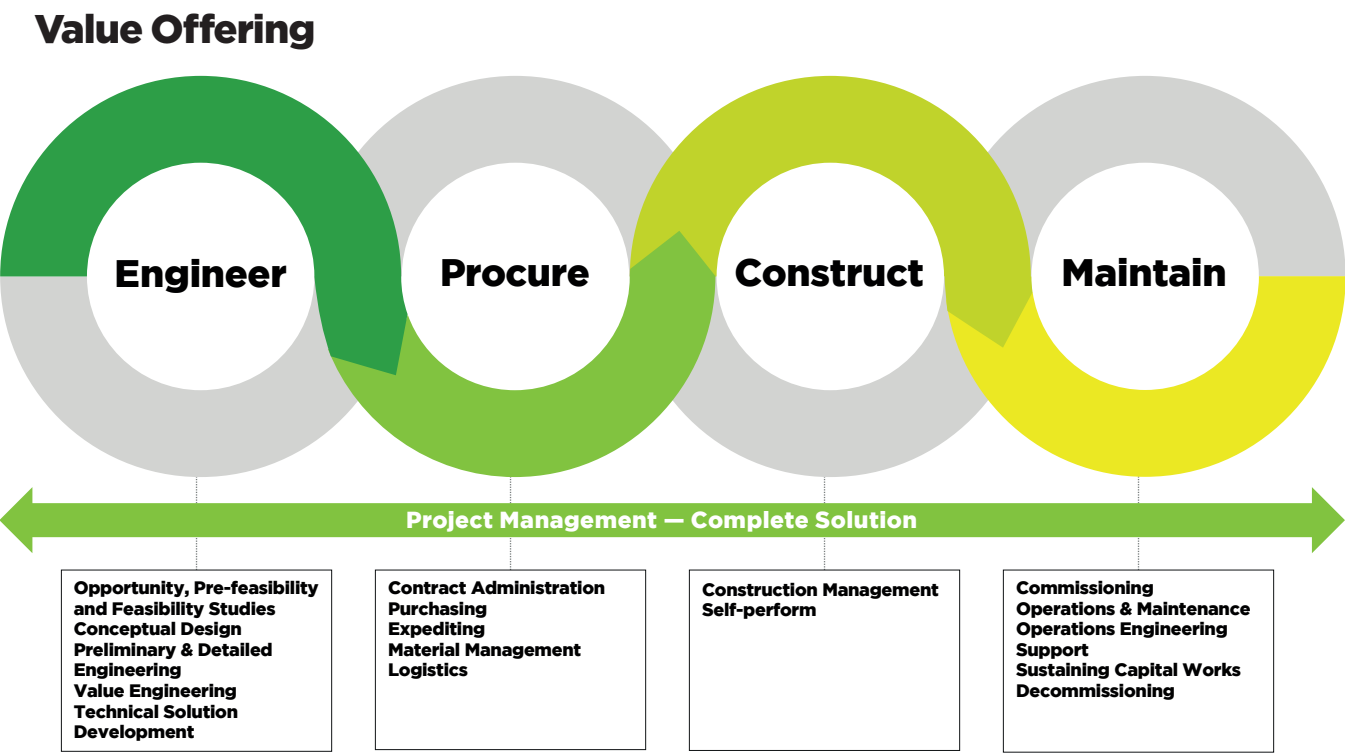
<b>Machine:</b>	Crib & Shoulder Compactor		<b>Model:</b>	CSC	<b>Year:</b>	1989	
<b>Length:</b>	6.0m	<b>Height:</b>	2.7m	<b>Width:</b>	3.5m	<b>Weight:</b>	9,400kg
<b>Weight/Axle:</b>	6,000kg			<b>Work Speed:</b>	10 cycles/minute		
<b>Air Controlled Cab:</b>	Yes			<b>Travel Speed:</b>	30km/h		
<b>Gauge:</b>	Convertible						





# BUSINESS MODEL

A value offering encompassing part or full optimal integration of the complete life cycle of project execution; Project Management, Engineering, Procurement, Construction, Commissioning and Operations.



## Market Sectors

Infrastructure

⚡ Power

💧 Water & Waste Water

🚗 Transport

Resources

🏠 Mining & Metals

🛢️ Oil & Gas

🧪 Petrochemical

Building

🏛️ Government

🏢 Commercial/Industrial

👤 Social/Residential

Specialist Capabilities

🌊 Marine

🔍 Pipelines

🏠 Tunnelling & Underground

Rail

Mechanical

Civil

Fabrication

Building

South East Asia

Australia

Pacific Islands

New Zealand

## GLOBAL REGIONS

We operate throughout Australia, Asia, New Zealand, and Pacific Islands. Bringing local knowledge and international expertise.

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# OUR VALUES

Our Values underpin everything we do.

**Safety & Care**

Home without harm, everyone, everyday. We care for the health and wellbeing of our people, the communities we work in and for our environment.

**Honesty & Integrity**

We do what is right — consistently and transparently.

**Customer Focus**

We build relationships by engaging, listening, understanding, collaborating and delivering on our promises with excellence.

**Teamwork**

We are team players who are committed to the Group purpose, vision and values. We respect, cooperate and collaborate with each other, tapping into our rich diversity.

**Performance Excellence**

We are clear about what we need to do to achieve the desired results. We strive for excellence and we hold ourselves and each other accountable.

SAFETY & CARE  
HONESTY  
& INTEGRITY  
CUSTOMER FOCUS  
WORKING  
TOGETHER  
PERFORMANCE  
EXCELLENCE

# THE McCONNELL DOWELL GROUP

**Deliver individual infrastructure contracts circa \$1 Billion in value**

**Experienced in all contract delivery models**

**Employ over 3500 office and project staff**

**Operate in 23 locations – Australia, Asia, New Zealand and Pacific Islands**

**Over 55 years of creative construction 1961 — now**



**McConnell Dowell**  
The Creative Construction Company, building better communities through safe, smart, efficient infrastructure.  
[www.mcconnelldowell.com](http://www.mcconnelldowell.com)  
Operating in: Australia, Asia, New Zealand, Pacific



**Built Environs**  
Provides multi-disciplinary capability in design and construction of commercial, industrial and institutional buildings.  
[www.builtenvirons.com.au](http://www.builtenvirons.com.au)  
Operating in: Australia



**Aveng Limited**  
Parent Company Aveng Limited, have a number of specialist operating groups that partner with McConnell Dowell on projects.  
[www.aveng.co.za](http://www.aveng.co.za)





**DRIVING  
PROGRESS**

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