

Downer Rail & Transit Systems Engineering Consulting Services

Enabling communities to thrive

Downer is the leading provider of integrated infrastructure services across Australia and New Zealand. We are committed to building strong relationships with our customers, people and communities.

Together, we enable communities to thrive, shaping a connected and sustainable future.

With 32,000 employees, our footprint covers every corner of Australia and New Zealand.

We operate across five sector-focused, trans-Tasman business units, leveraging our technical capability to ensure our customers' success.

What we do

490 million

passenger journeys on our operated or maintained transport network in a standard year (including Keolis Downer)

50,000 kilometres

of roads managed and maintained in Australia and New Zealand

80%

of power generated in the National Electricity Market is from plants serviced by Downer

30,000

students who attend education facilities that Downer provides asset maintenance services to

One-third

of all Australia and New Zealand Defence estates are maintained by Downer

High

performing sustainability ratings, as measured by independent ESG analysts (e.g. Sustainalytics, ISS and S&P Global)

35 million

power, gas and water meter reads in Australia each year

12.5 million

Australians supplied with water and waste water services

4.2 million

hours of non-clinical support services delivered each year to more than 200 healthcare facilities in Australia and New Zealand

100,000 kilometres

maintain and operate 100,000km of electricity and gas networks

Keolis Downer

Keolis Downer is Australia's largest private provider of multi-modal transport solutions, Australia's largest light rail operator, and a significant operator of buses.

#1 Australia's largest private multi-model operator

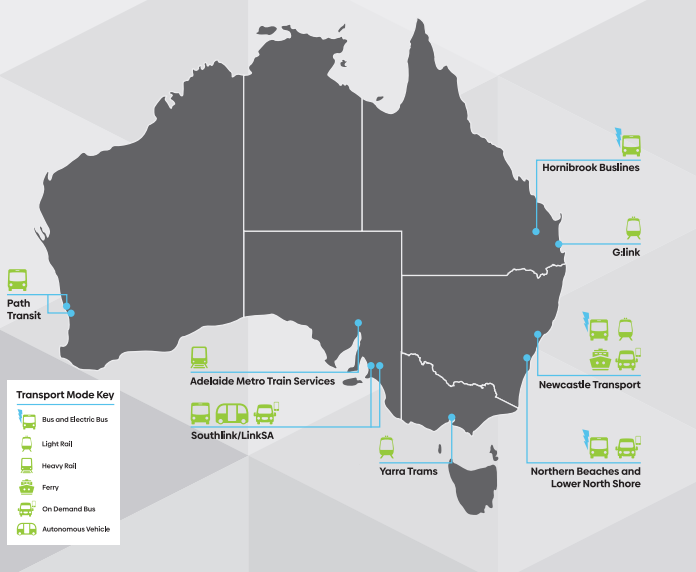
25 sites
5 states

+1,300
buses

+500
light rail vehicles

350 million
annual passenger journeys

+5300
employees



Downer Rail & Transit Systems

Downer Rail & Transit Systems is the leading rail business in Australia. We have a long history of designing and manufacturing rolling stock and we are the largest provider of through-life support asset management services for passenger rollingstock in Australia.

Some of our flagship projects include the manufacturing and maintenance of:

- 65 new six-car trains as part of the Queensland Train Manufacturing Program (QTMP), supporting the 2032 Brisbane Olympic and Paralympic Games.
- 119 Waratah trains in New South Wales – Australia's largest passenger fleet on Australia's largest passenger network.
- 70 High Capacity Metro Trains in Victoria. Additionally, we're refurbishing 450 of Melbourne's iconic tram fleet, the largest tram overhaul project in the world.

We also have a proud history of designing and manufacturing locomotive across Australia, having built almost 1,000 locomotives including diesel electric, diesel hydraulic, electric and steam.

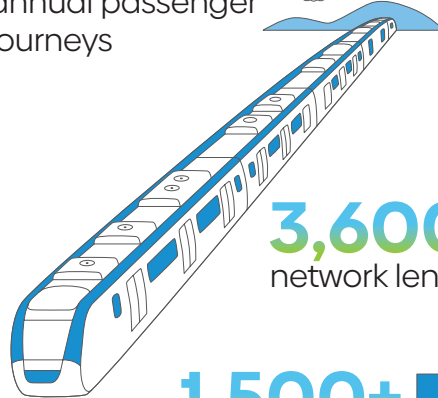
15+ sites

depots & facilities
operated



880+ million

annual passenger
journeys



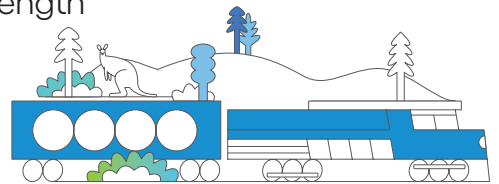
13.5+ million

people serviced

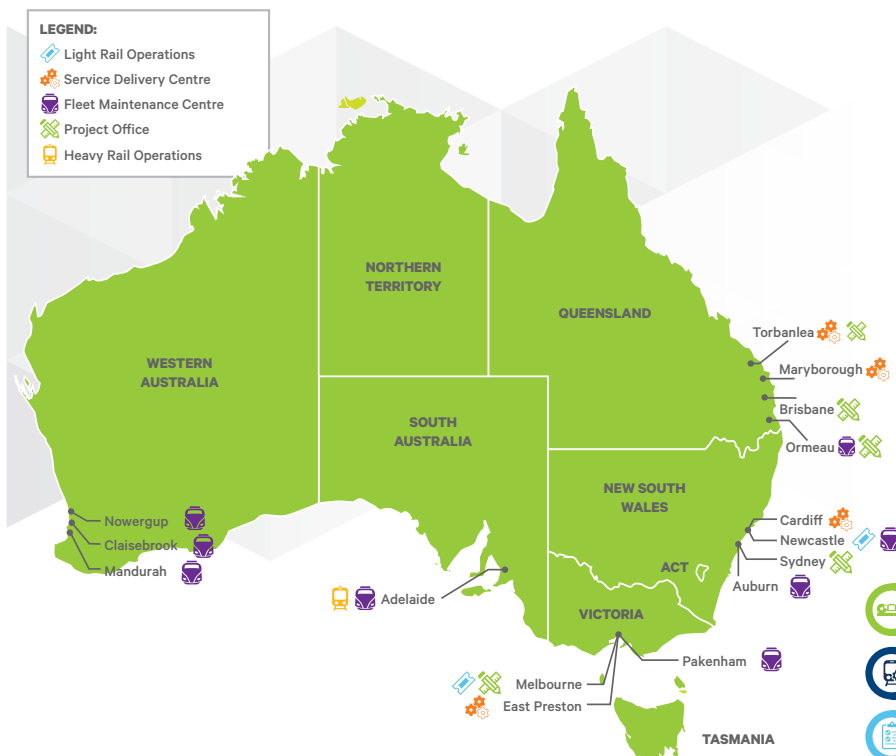


3,600km
network length

1,500+
cars
fleet supported



Our locations and capability



Downer RTS Engineering Consulting Services

With over 150 years of experience in rail, Downer is now offering dedicated rail engineering consulting services across the globe.

Downer's RTS Engineering Consulting Services business aims to revolutionise the transportation industry by providing seamless, efficient, and sustainable solutions tailored to meet the needs of both our customer, as well as theirs.

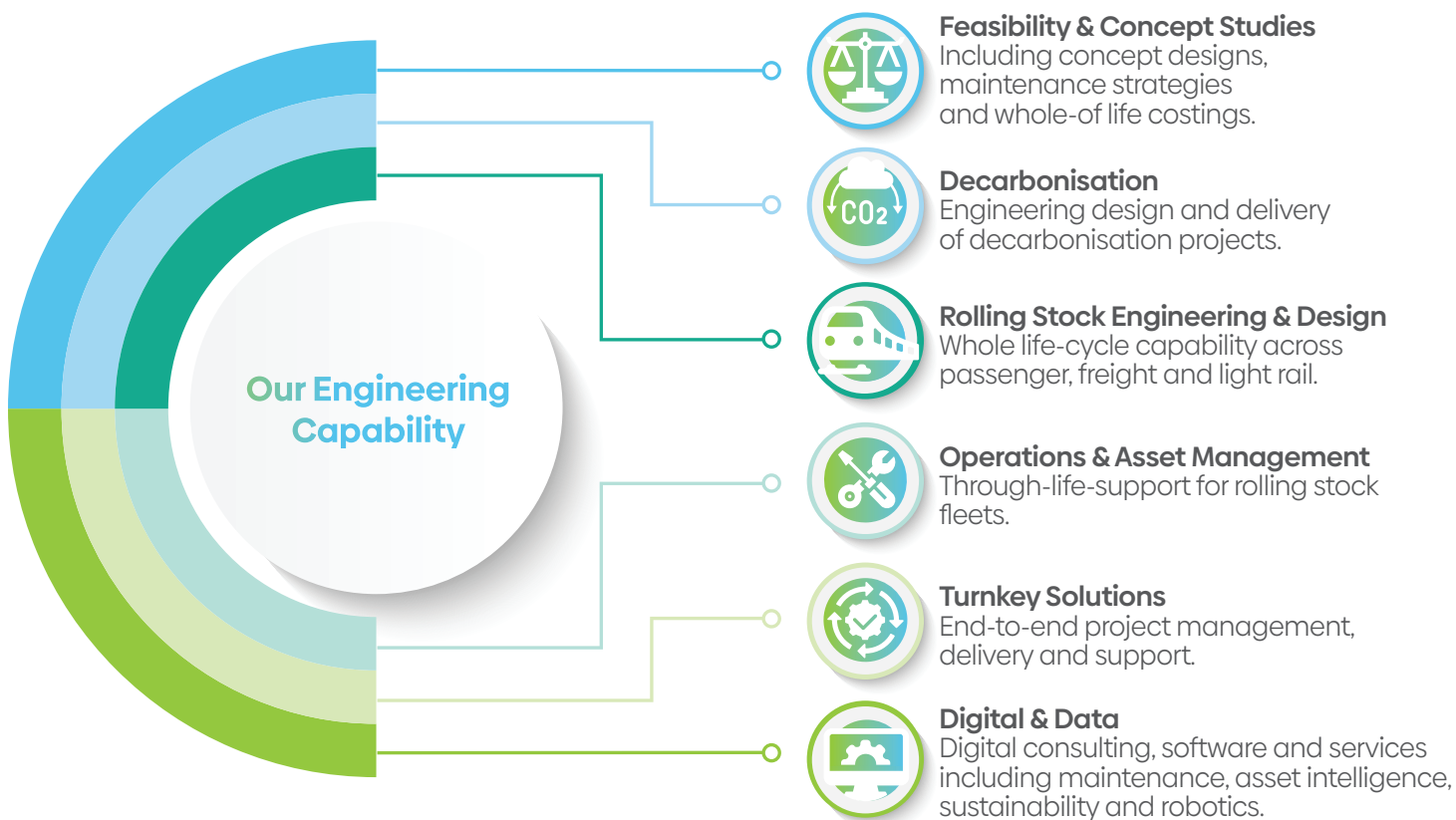
Our integrated approach sets us apart, offering clients a one-stop solution for all their transportation needs. By combining engineering excellence, operational expertise, data-driven insights, and project management proficiency, we deliver holistic solutions.

With experience across design, manufacturing and through-life-support, our team of engineers will benefit your next transportation project.

200+ Engineers
and Designers

100+ Projects

400,000+ Hours
delivered in 2023



Our Engineering Capability

Feasibility and Concept Studies

Capability to perform various levels of feasibility analysis and concept studies which can support business case development for projects. By combining technical and commercial acumen the capabilities in this area include:

- Power at the rail of 2300 kW in all modes of operation including overhead connection and with energy storage / diesel mode.
- Full locomotive electric regenerative braking capability.
- Fully appointed vibration isolated Driver's Cab with AAR crash worthiness.



Decarbonisation

Our team is proud to partner with our customers to achieve their Net Zero goals. We have capability across rollingstock design, manufacture and rail operations for passenger and freight to assist with decarbonisation, with some proven outcomes including:

- Onboard energy storage.
- Decarbonisation options and simulations for energy use.
- Modifications to reduce energy consumption.
- Energy Saving Certificate projects.

Rolling Stock Engineering and Design

Capability in all areas of rolling stock engineering and design for heavy rail and light rail across both passenger and freight. Our teams' skills can be employed across the whole lifecycle of any project:

- Design—design engineering, design management, CAD, drawings, electrical schematics.
- Systems engineering—requirements management, specification development, interface management, design package management, verification management, contract compliance.
- Specialist engineering—RAM, Safety, HF.
- Integration of complex systems as the head contractor.
- Testing and commissioning.
- Stakeholder engagement—DSAPT.
- Decarbonisation solutions.
- Onboard signaling, ETCS and CBTC.
- Risk assessments.
- Design safety assurance.
- Finite Element Analysis.
- Decommissioning and retirement.





Operations and Asset Management

With long term through-life-support contracts across flagship projects throughout Australia, this is a core area of expertise for our team with the ability to support your business with:

- Fleet engineering support (reliability analysis, FMECA).
- Rollingstock modernisation, overhaul, and repair.
- Maintenance strategy and optimisation (condition monitoring, maintenance procedures, maintenance management).
- Obsolescence management.
- Decommissioning.
- Configuration management.
- Technology refresh.



Turnkey Solutions

Capability to provide end-to-end solutions from feasibility through to design, manufacturing and maintenance:

- Production—check sheets, defect/quality appraisals, manufacture, assembly.
- Concept designs and business cases.
- Rolling stock procurement for turnkey solutions.
- Operational readiness.
- Revenue service operations.



Digital and Data

To support our customers, we offer multiple areas of digital and data expertise, including:

- RTS Digital, our digital consulting, software and services business, leveraging over 15 years of experience in technology innovation. Powered by Downer's TrainDNA platform, RTS Digital takes a product-based approach. Our offering packages capabilities and tools into modules addressing specific customer needs across Digital Maintenance, Operational and Asset Intelligence, Robotics and Sustainability.
- xDNA accelerates digital transformation for critical industries like transport, defence, and manufacturing. Our diverse team of experts leverages groundbreaking technologies to create data-driven solutions and integrated work experiences that transform operations and drive substantial client outcomes.
- Our National Integrated Operations Centre which is armed with Downer's industry-leading ICT capability and expert knowledge in rail network operations. Our team facilitates maintenance planning, engineering support and data analytics to provide benefits for our customers.
- Our expert pool of technical SME's delivering effective identification of failure modes and expedited containment of solution actions for our customers across digital and data for the rail industry.



RTS Digital
by Downer

xDNA | Accelerating Your Extraordinary.
A Downer Company

Current Engineering Consulting Projects

Downer RTS Engineering Consulting Services is at the forefront of providing innovative engineering solutions aimed at enabling communities to thrive. With a dedicated team of over 200 engineers and designers, we exceed conventional services by offering tailored engineering consulting and cutting-edge digital transformation solutions. Our holistic approach ensures seamless integration and delivers bespoke solutions that precisely meet the diverse needs of our customers.



Tangara Technology Upgrade

Independent engineering and manufacturing assurance of Sydney Trains' self-performed upgrades to the Tangara fleet.

This involved a 12-month engagement where our Engineering Consulting Services installed a project team made up of SME's relevant to the design works disciplines and production specialists.

Next Generation Tram

Partnering with Yarra Trams, our team of consultants led Operational Readiness and Operator Acceptance as Victoria introduces the next generation fleet of trams onto its light rail network.

This new fleet will be Victoria's largest investment in locally made trams with 100 new trams in the fleet. These trams will support Melbourne's light rail network, which at 250km is the largest in the world.



Locomotives

Working across all rollingstock, from passenger, light rail and freight, our team of consultants partnered with customers to support modifications on freight locomotives.

The team delivered engineering design and integration advice for our customer focusing on modifications on their existing locomotive assets.

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