



**RHOMBERG
SERSA**

**RAIL
GROUP**

Completed slab track system within tunnel using our proprietary RhoTAS modular track adjustment system

DELIVERING AUSTRALIA'S FUTURE: SYDNEY METRO – WESTERN SYDNEY AIRPORT

Location: Sydney, Australia

Client: WeBuild (a partner of Parklife Metro)

The project leverages slab track technology, delivering improved stability, durability, and reduced maintenance requirements compared to traditional ballast systems. We designed and deployed four high-production concrete placement units to install the track, ensuring efficiency, accuracy, and consistent construction quality.

The Sydney Metro – Western Sydney Airport project is more than a rail line. It is a cornerstone of Sydney's future transport network and a critical enabler of economic growth for one of Australia's fastest-expanding regions – improving connectivity for residents and businesses across Western Sydney for generations to come.

Our involvement in this landmark project reflects the depth of our engineering capability and reinforces our position as a leader in Australia's rail construction sector.



Australian first achieved

We delivered Australia's largest continuous slab track system, spanning 45 kilometres



Completed slab track system on viaduct

Innovating from the ground up:

In-house designed solutions for
complex rail environments

When no off-the-shelf solution existed for delivering slab track within tunnel environments, we designed one - then built four.

A production line inside a tunnel

Our purpose-built concrete placement units were designed, engineered and manufactured in-house to meet the precise demands of this project. Spanning 200 metres, each system operates as a self-contained production line within the tunnel, integrating a hi-rail shuttle, pipeline, pump and finishing platform into a single, coordinated solution.

The approach keeps every stage of the concrete placement process controlled, efficient and repeatable – from pour to finish – while reducing clean-up requirements and improving both quality outcomes and on-site safety.

Delivered at scale – An Australian first

Using this system, our team delivered 45 kilometres of continuous slab track – using Australian-made steel – across complex tunnel environments and viaducts in just nine months. This was an Australian-first achievement.

The mainline scope also included 22 turnouts and three diamond crossovers, demonstrating our ability to execute with precision across a project of significant scale and complexity.

Sustainability was embedded throughout delivery. The use of reusable formwork systems reduced both cost and environmental impact, reflecting our commitment to responsible construction practice on every project we undertake.



One of four concrete placement units in action inside the Sydney Metro – Western Sydney Airport Line tunnel

Seven kilometres of slab track delivered across viaducts



Our delivery approach

The alignment traverses tunnels, viaducts and varied terrain, presenting complex engineering challenges. These were addressed through advanced design and construction solutions, including our proprietary RhoTAS modular track adjustment system. This system enabled track lifting, as well as coarse and fine adjustment of horizontal and vertical rail head alignment to meet high-speed track standards.

Beyond infrastructure delivery, the rail line is a critical enabler of economic growth in Western Sydney, improving connectivity for residents and businesses and supporting the region's rapid expansion.

Our involvement in this landmark project demonstrates our expertise in delivering large-scale rail infrastructure and reinforces our position as a leader in Australia's rail construction sector. The Western Sydney Airport Line will be a cornerstone of Sydney's future transport network and a significant milestone for our organisation.

One of three diamond crossings under construction





Project facts



Delivered 45km of continuous slab track:

- 23km surface (incorporating 7km on viaducts)
- 22km tunnels



48 turnouts and 4 diamonds constructed:

- 10 turnouts on the main line
- 12 turnouts and 3 diamonds across 3 key turnback locations
- 26 turnouts and 1 diamond built in the stabling and maintenance facility



6,000 welds completed across surface, tunnels and the Stabling and Maintenance Facility, including:

- 4,400 flash-butt welds
- 1,600 Aluminothermic welds



104km of rail installed
(5,800 tonnes)



80,000 sleepers installed



Delivered and tamped 7.2 km of ballasted track



65,000m³ of concrete poured



3,700 tonnes of reinforcing steel placed



Non-ballasted track:

- 671m of embedded
- 158m of direct fix
- 141m of pedestal



Workforce of 450+ at peak



750,000+ hours worked across the project

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Rhomberg Sersa Australia is the local operating division of the Rhomberg Sersa Rail Group – a globally respected rail construction leader with operations spanning Europe, Australasia, America and beyond.