

Creating a world
fit for the future



RAIL & TRANSIT

Experts in critical and complex
railway systems 



RAIL SPECIALISTS YOU CAN TRUST

We work with governments, operators, infrastructure managers and manufacturers to ensure railways deliver the highest possible value to their customers and wider communities.

For our rail clients across Canada, we offer a unique mix of assurance and technical consultancy services that ensures access to some of the industry's leading technicians and their experiences of implementing major railway projects across the world.

We offer trusted advice and practical solutions across the entire rail project life cycle:

STRATEGY AND PLANNING

Bringing knowledge of the rail domain to the development of sustainable transport networks.

ASSET OPTIMISATION

Data analysis, modelling and research focused on outcomes.

INDEPENDENT ASSURANCE

A world-leading portfolio of rail certification and assessment services.

PROJECT DELIVERY

Expert support for seamlessly integrating your project into the wider rail system.

REDUCING ENVIRONMENTAL IMPACT

Supporting rail's contribution to a low-carbon world.



SUPPORTING RAIL CLIENTS ACROSS CANADA

Contact us

Find out how we can help you:
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Ricardo Canada Inc. | Ontario

With federal programmes prioritising transportation and green infrastructure projects, and significant investments committed to public transit, Canada's rail sector is embarking on a period of unprecedented change, with a range of projects that must be built to the highest technical standards.

Our value to the industry will derive from the global best practice and expertise we can bring to even the most complex of projects.

Drawing on the capabilities of more than 600 rail specialists around the world, we can provide experts with direct experience of constructing new transit systems in London, Amsterdam and Sydney, for example, or maintaining high-speed networks in Asia, or opening freight routes across the Arabian Peninsula.



Canada's first accredited railway Independent Safety Assessor

Ricardo was the first organisation to be accredited to ISO/IEC 17020:2012 under Canada's new Independent Safety Assessor for Railway Systems Accreditation Program. Launched by the Standards Council of Canada (SCC), the program's intention to bring rail safety and risk management processes in Canada into line with global best practice.

Our accreditation in December 2021 meant we were the first certification supplier to demonstrate the qualifications of its assessment teams - such as their understanding of relevant international standards (for example, EN 50128 and EN 50129) - as well as internal practices for training, record keeping and internal auditing.



SCC is proud to have Ricardo as our first customer accredited to this brand-new program

Elias Rafoul, SCC Vice-President, Accreditation Services Branch.

HOW WE HELP

Our service mix of strategic consultancy, in-house engineering, and independent assurance and testing means we can approach your project from a unique vantage point.

Within our teams are experts who know your expectations, but also understand the rail industry's structures and idiosyncrasies, its complex system interfaces, and the global standards and local practices that underpin day-to-day operations.

Our role is to bring the expertise you need to navigate the industry's operational, commercial and regulatory challenges, and ensure you have all the resources you need to deliver a safe, reliable and sustainable railway in any part of the world.

94%

of our clients choose to work with us again within **two years***

*Measured by value in August 2018



Commitment and hard work are the strengths of Ricardo.

Bangkok Expressway and Metro Public Company Limited

A trusted partner who understands your priorities

Global perspectives

Our international network of offices and technical centres supports the transfer of skills and experience from one region of the world to the next.



Whole-system mindset

We will help your teams apply systematic processes so that your engineering projects deliver a positive contribution to the wider rail system.



Collaborative approach

We add value by working alongside your teams in an open and constructive partnership, offering balanced and insightful perspectives on the bigger picture.



An industry voice

Our experts are leading contributors to the international committees, working groups and professional forums that define the rail industry's technical standards.



INDEPENDENT ASSURANCE

By subjecting major safety-critical rail projects to the rigorous scrutiny of an accredited Independent Safety Assessor – an approved organisation with no financial interest in the project – the project developers, transit authorities and travelling public gain extra confidence that safety was afforded the highest priority throughout the development.

We are the first organisation to be accredited to ISO/IEC 17020:2012 under Canada's new Independent Safety Assessor for Railway Systems Accreditation Program. It means we have demonstrated our technical capabilities to Canada's accreditation organization and can support major rail projects by ensuring safety is managed in with full transparency from initial design through to manufacture, installation and ongoing operations.

CLIENTS INCLUDE:

- Metrolinx
- Stadler
- Etihad Rail
- Banedanmark
- Thales Group
- Bangkok Metro
- Metro de Madrid
- ProRail
- DB Netz AG



IN ACTION

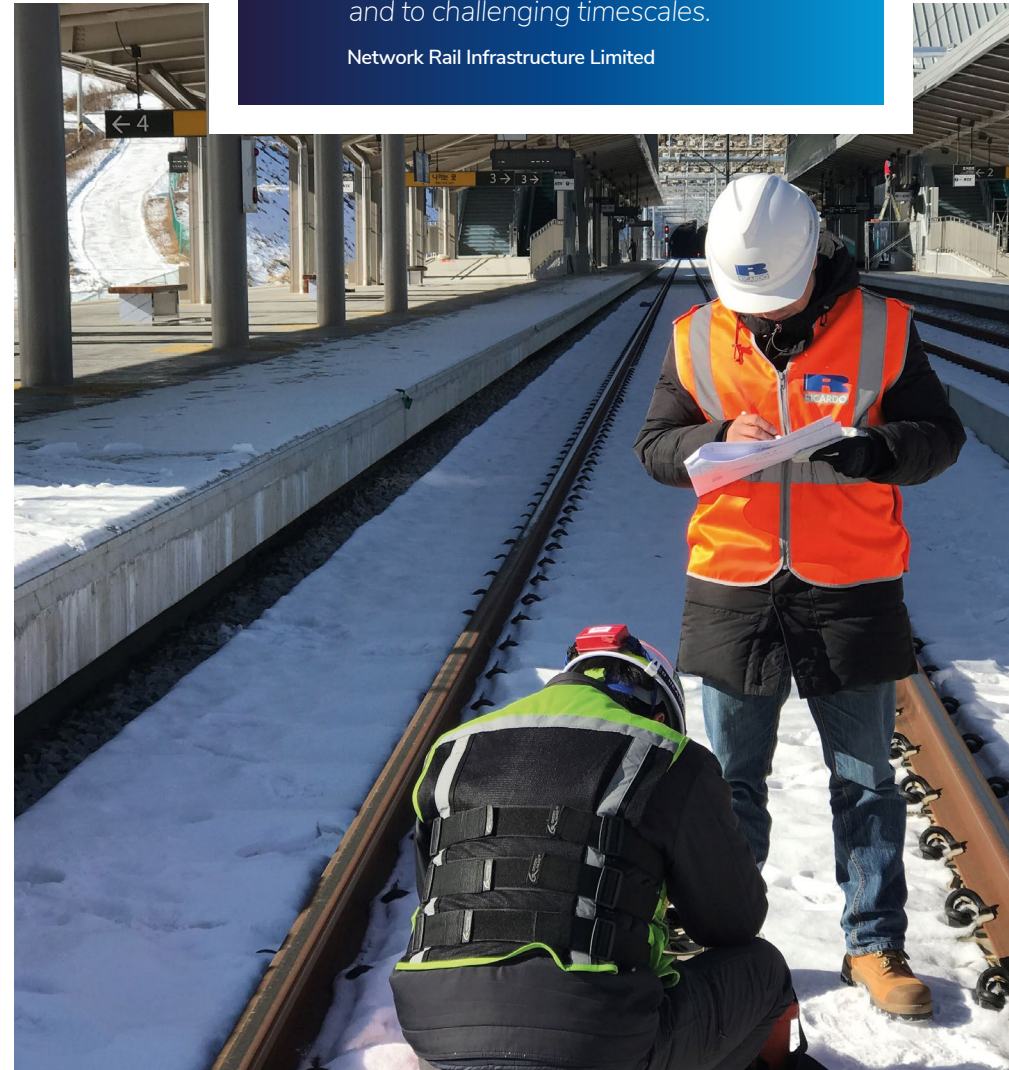
Taiwan High Speed Rail

Independent Verification and Validation services

We provided independent verification and validation services for the extension of Taiwan's high-speed network, with our remit extending across functionality, quality, maintainability and safety. Our relationship with the railway extends further back to 2000, when we provided similar assessment services during the construction of the inaugural high-speed network, the first international use of Japanese bullet train (Shinkansen) technology.

“Ricardo have been flexible in terms of reviewing the documents at short notice and to challenging timescales.

Network Rail Infrastructure Limited





Working with Ricardo has been very enjoyable. We were kept regularly informed throughout and the document was comprehensive and well-produced.

London & South Eastern Railway Limited



PROJECT DELIVERY

Our value to clients comes from our belief in a 'whole-system' approach to railway projects.

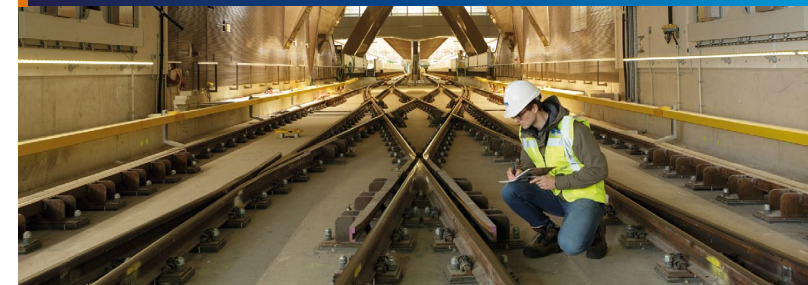
Even in specialist areas such as design engineering, procurement, RAMS and digital security, we provide experts chosen not just for knowledge of their discipline but also for their understanding of how your project should integrate into the wider system.

It is through these multi-disciplinary teams that we will help you to define your objectives, determine realistic work programmes and schedules, and provide any additional skills you will need to achieve your goals.

CLIENTS INCLUDE:

- Alstom
- CRRC
- Siemens
- MTR Corporation Limited
- Korea Railroad Research Institute

IN ACTION



Amsterdam Metro

Systems integration support

We provided systems integration support over a decade of planning, design, construction and testing for Amsterdam's 11km North-South metro. From infrastructure and traction power supply through to the introduction of communications-based train control, we ensured each sub-system was seamlessly integrated into one of Europe's most modern subterranean routes.

ASSET OPTIMISATION

We add value by focusing on achieving your project's outcomes – we don't just implement a technology simply because it has worked elsewhere. We have no vested interest in championing specific solutions.

Instead, real-world domain knowledge informs our data analysis, modelling, research and development, and safety assurance. A whole-system mindset means we ensure each project positively contributes to the full operational railway.

We can also bring insights and best practice from beyond the rail domain, drawing upon Ricardo experts from the automotive, manufacturing, energy and environment sectors on asset optimisation strategy.

CLIENTS INCLUDE:

- NS Group
- Network Rail
- Government of South Australia
- HTM (The Hague)
- Iarnród Éireann
- ProRail

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Infrabel

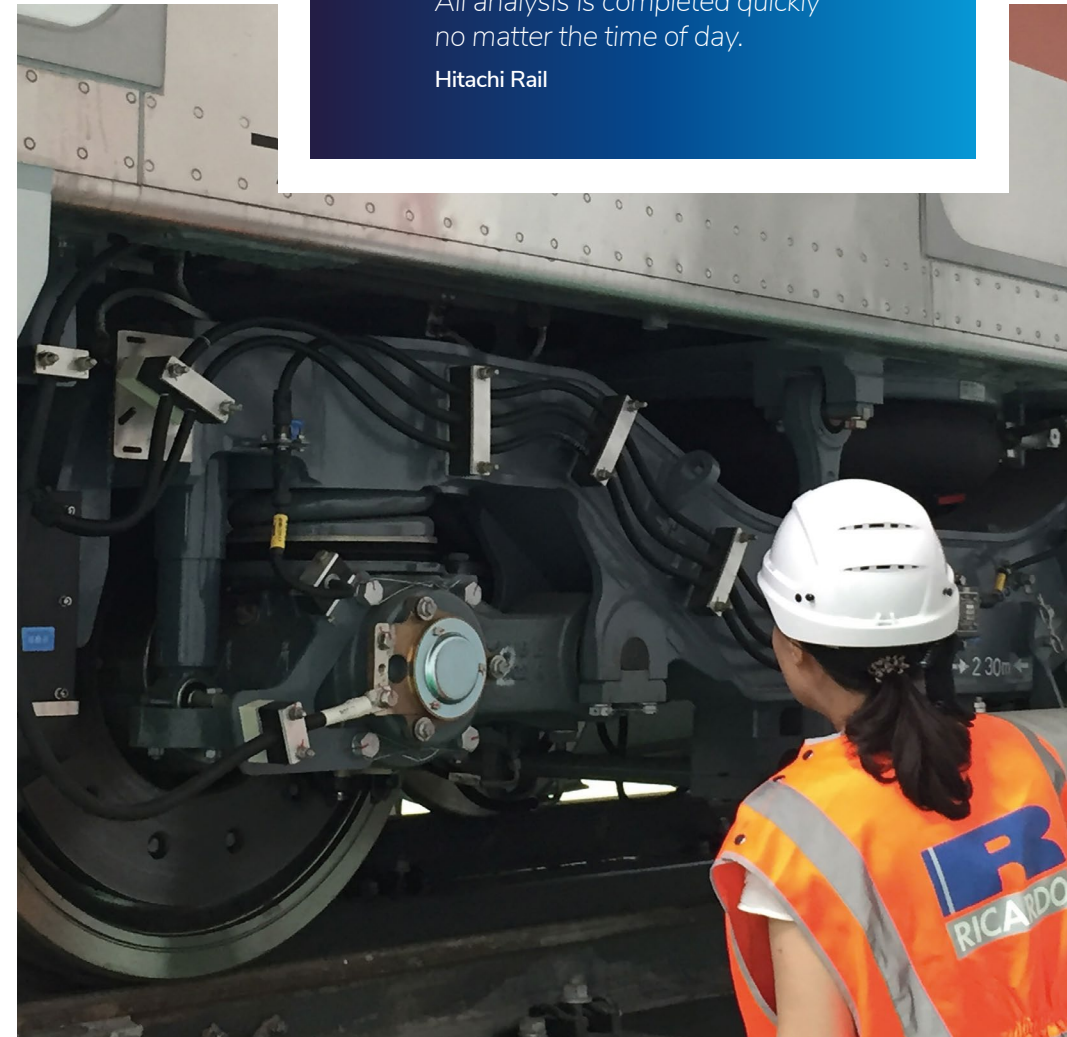
Pantograph monitoring

Ricardo's pantograph monitoring units have been installed in the Brussels area to prevent faulty units causing costly damage to the overhead catenary. According to Belgian infrastructure manager, Infrabel, "The systems have identified damaged pantographs that needed immediate actions to avoid possible overhead wire breaks."



Great response every time.
All analysis is completed quickly
no matter the time of day.

Hitachi Rail



REDUCING ENVIRONMENTAL IMPACT

We can help your organisation reduce the environmental impact of its operations and, in turn, gain competitive advantages and efficiency improvements.

Notable projects include a partnership role in the world's first solar-powered railway and providing technical support during the conversion of diesel rolling stock to hybrid-battery or hydrogen power.

As a member of the Ricardo group, we can also draw on specialists from other sectors, such as experts in low-emission technologies within the automotive sector or environmental analysts who advise governments on sustainability targets.

CLIENTS INCLUDE:

- Hitachi Rail
- Porterbrook
- Edinburgh Trams
- European Investment Bank
- Province of Friesland

IN ACTION



HydroFLEX

Safety and certification expertise

We provided safety and certification expertise for the first hydrogen-powered train to operate on the UK's network. The vehicle was fitted with hydrogen fuel tanks, a fuel cell and a battery pack and can operate with zero carbon emissions. The aim was to demonstrate a safe transition to hydrogen power on track sections where electric power is not provided.



Professional yet adaptable in the ever-changing production environment.

Eurostar International Limited



Ricardo put extraordinary effort into meeting deadlines and deliverables.

Aarhus Letbane



STRATEGY AND PLANNING

Our strategy and planning practice brings our expertise of the rail domain to the long-term development of transport networks.

We support clients ranging from governments and industry regulators to operators and product manufacturers, guiding them through every stage of the project life cycle from initial scoping to implementation and evaluation.

Whether you are preparing an economic impact assessment for a new railway or implementing organisation-wide cyber security, we can help you define your objectives and engage with technical and non-technical audiences with a transparency that builds trust.

CLIENTS INCLUDE:

- Canadian National Railway
- Transport for NSW
- KORAIL
- Manila Metro Rail Transit System
- Crossrail Limited

IN ACTION



Sydney Metro

Shadow Operator

We are acting as 'Shadow Operator' for the construction of two new driverless routes on Sydney's metro. In this role, our experts provide guidance to the construction and design teams on the day-to-day needs of a fully automated railway in terms of operations, safety and maintenance planning.

THE RICARDO GROUP

Maximise efficiency. Eliminate waste.

Our work extends across a range of market sectors – including commercial vehicles, rail, defence, motorsport, power generation and government – and our client list includes transport operators, manufacturers, energy companies, financial institutions and government agencies.

Through our multi-industry knowledge, we are uniquely positioned to handle our clients' toughest strategic and operational challenges, with assignments that have included strategy development, cost reduction, safety management, regulatory compliance and environmental impact assessments.

Our in-house engineering capabilities also enable us to provide high-quality prototypes and low-volume manufacturing of complex products and assemblies, including engines, transmissions, electric motors and generators, battery packs, and fuel cell systems.



Sir Harry Ricardo,
1885–1974

And in everything we do, in every assignment we undertake, we remain committed to the ethos of our founder, Sir Harry Ricardo, one of the most innovative mechanical engineers of his time, who in 1915 set out on a mission to maximise efficiency and eliminate waste.

Over **3,000** engineers,
consultants and scientists
across **20** countries





We offer access to a truly international network of rail expertise, with projects teams based in cities such as:

Beijing	London	Sydney
Dubai	Madrid	Seoul
Copenhagen	Ontario	Taipei
Hong Kong	Utrecht	Yokohama

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Version 1.0

