

Rail



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2010

Working with you towards the long term success of the rail industry

New Lynn Rail Trench – Beca multidiscipline design project

The Rail Sector is experiencing a revival and facing unprecedented growth over the next 20 years. To successfully compete with other modes of transport, our rail clients are focused on improving the quality of their existing assets and services and investing in new network infrastructure to create effective solutions for their passenger and freight customers.

Beca is committed to the long term success of the rail industry. Our civil and structural skills and rail project management expertise have enabled us to successfully deliver major New Zealand urban passenger rail projects. Through our Australasian presence, we can work closely with rail operators and infrastructure owners across the region to deliver these services.

Our clients

Beca's client relationships are founded on providing a professional, effective and skilled approach to the planning, design and maintenance of key infrastructure assets.

Our clients include national authorities, contractors, local agencies and international clients. Clients such as KiwiRail, who want to harness a broader array of skills and understanding in the rail sector, use Beca because of our proven track record in obtaining planning consents, design and maintenance as well as our ability to develop transport strategies.

We have long standing relationships with contractor companies who share our focus on excellence, partnering with them in alliances or involving them early in the design process to get their inputs on the buildability of a project design. We have also forged strong relationships working within communities and helping local authorities and councils to deliver sustainable Transit Oriented Developments.

Our clients can be confident that, in selecting Beca, they are selecting a partner who is able to help them strike a balance between social, environmental and economic impacts; and who will build sustainable, long term relationships based on mutual understanding, respect and trust.

Our capabilities

Beca has gained significant experience in a variety of New Zealand rail projects. Delivery models have included Early Contractor Involvement and partnerships with KiwiRail.

This experience has enabled us to develop a technical group with expertise in handling all aspects of complex rail infrastructure projects.

From feasibility studies, planning, concept and detailed design to construction management, Beca has the experience, skills and resources to provide high performing teams.

Our services

Our planners, engineers and project managers provide a wide range of services covering a significant portion of the rail systems lifecycle. From planning and advisory services through to operations and asset management of infrastructure, rolling stock and equipment, we have specialists with extensive experience who can provide quality rail project outcomes.

Our services include:

- Notices of Requirements for rail designations, outline plans, resource consents, and other planning applications
- Multi-modal transport planning
- Rail operations and pedestrian flow modelling
- Economic and financial assessment
- Demand forecasting for freight and passenger systems
- Scoping of project functional requirements
- Civil and structural engineering including cut and cover tunnelling and underground structures
- Project management
- Design of rail corridors
- Safety and reliability analyses
- Operations and maintenance and asset management systems
- Environmental assessment and management.



Relationship contracting - a Performance Culture

Beca has been at the forefront of successful alliance and ECI (early contractor involvement) projects. This partnering culture adds value to the way we work collaboratively with our clients and contractors in conventional project delivery models.

We seek to work in an integrated way with our rail clients for 'best for project' outcomes and to develop sound and robust delivery strategies and mechanisms to provide a framework for success.

Projects: New Lynn Rail Trench (ECI with KiwiRail and Fletcher), Wellington Regional Rail Programme (partnership with KiwiRail), Victorian Desalination Plant and Victoria Park Tunnel Alliances.



Planning for Successful Outcomes

Our planners focus on 'best for project and best for client' outcomes. We have worked with central, regional and local bodies, preparing Notices of Requirement for new rail designations.

We have extensive experience in preparing transport plans, resource consents and other planning applications, and take pride in our effective stakeholder and community engagement programmes.

As an example, we worked with KiwiRail to obtain its first substantial designation for a new rail line in around 30 years, establishing for future construction a rail corridor to link the North Auckland rail line with the port at Marsden Point.

Projects: Marsden Point Rail Link, Auckland CBD Rail Link Study, Melbourne Metro Project, Auckland Passenger Transport Network Plan.



New Rail Infrastructure and Upgrading Existing Rail Assets

Beca has played a major role in developing new rail infrastructure and upgrading KiwiRail's existing rail lines. Projects have included the duplication of Auckland's DART projects and Wellington's programme for upgrading its network, electrification, new stations, depots and stabling.

We understand the constraints of working on existing assets in an operating environment, and prioritise safety as well as cost-effective, sustainable outcomes.

Projects: Wellington's Regional Rail Programme: Station Third Entry and Maintenance Depot Redevelopment, New Lynn Rail Trench, DART 8 (3 new stations) and track duplication, NIMT Electrification, KiwiRail National Bridge Audit.



Collaborating closely with our clients and building on a cornerstone of mutual understanding creates an environment that invites success.

A Flexible Approach to Project Management

Our project management services range from feasibility advice through to day-to-day management of project delivery. Our emphasis on clarifying shared goals, tight budget control, extensive stakeholder consultation and careful programme management means the entire project team stays focussed on achieving a successful result.

Our project management style incorporates the flexibility that most projects need to allow unexpected challenges to be addressed – often with innovative solutions.

Projects: Britomart Transport Centre, Wellington's Regional Rail Programme: Station Third Entry and Maintenance Depot Redevelopment, MainCo Station Refurbishment Programme in Melbourne.



Transportation Modelling and Rail Network Planning

Transport demand and economic forecasting models are valuable tools to facilitate quantification and appraisal around the impacts of transport developments and network change initiatives. Beca's transport modelling team is experienced in a wide range of modelling software.

Our modelling team has worked internationally on a range of transportation projects including work in examining the case for new rail infrastructure.

Beca uses a number of pedestrian modelling simulation software, designed to provide realistic simulation of pedestrian movements to inform better design through understanding transport and pedestrian arrivals, walking speeds, passenger destinations, facility layout and priority traffic.

Projects: Sydney South Western Rail Link Multimodal Traffic Modelling, Diamond Hill Railway Station Hong Kong, Auckland's Britomart Transport Centre, ARTA Passenger Transport Network Plan, Kingsland Station Auckland (Rugby World Cup 2011) for ARTA.



Our vision:

“Creative people striving together to transform our world”

About Beca

Beca is one of Asia-Pacific’s largest employee-owned engineering consultancies, with over 2,500 employees working out of offices throughout the world. Our main hubs are in New Zealand, Australia and Singapore.

As well as numerous engineering consultancy services, we offer cost management, project management, architecture, land information, valuations and software development. Beca supplies engineering and related consultancy services to many markets including water, defence, education, healthcare, transportation and power.

Our employee ownership structure empowers key staff to take personal responsibility for our reputation for quality, innovative, professional and client-friendly services.

Our values

Partnership: We value longstanding relationships with our clients, business partners and colleagues across the globe. Trust, integrity and teamwork are the foundations of our culture.

Tenacity: We stick by our clients and the need to solve their complex challenges. Our perseverance, attitude, systems and disciplines focus our efforts into the delivery of excellence.

Enjoyment: We thrive on challenges and take pride in being innovative. We enjoy each other’s company and celebrate our achievements, having fun along the way.

Care: We respect each other, our clients, the environment and the community. Safety and care are embedded in our work practices and are essential to the positive solutions we deliver for our clients.

Global office locations

Australia Brisbane, Melbourne, Sydney, Wollongong **China** Beijing, Shanghai **Indonesia** Jakarta **Myanmar** Yangon **New Zealand** Auckland, Christchurch, Dunedin, Hamilton, New Plymouth, Tauranga, Wellington, **Singapore**

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