Civil Engineering

What is the purpose of civil engineering in a rail environment?

Civil Engineering in a rail environment includes the investigation, design, construction, and maintenance of the railway track and supporting structures i.e. bridges, tunnels, earthworks and drainage. It involves following systems, standards, and design principles that enable safe and efficient movement of trains on the line. This also includes the management of the assets through inspection, repair, and replacement processes to ensure they are kept in optimum condition.

The investigation, construction, and maintenance of track and other railway structures in a “live” rail environment offer unique challenges to civil engineers to improve materials, designs, and processes.

What are the career paths for civil engineers?

Working in rail environment offers a civil engineer the opportunity of being involved in a variety of tasks including:

- Investigating geotechnical problems, such as slope instability and track foundation failures
- Designing and constructing new track and bridges
- Managing the maintenance, upgrading and construction of track, bridges, and other railway structures
- Supervising civil contract works

These tasks lead to career opportunities in:

- Geotechnical Investigation
- Track and Civil Design
- Track and Structures Maintenance
- Civil Construction Management
- Technical Standards
- Project Management

What kind of civil engineer is suited to working in a rail environment?

Civil engineers who are dedicated and committed to their profession, who enjoy the challenge of operating in a dynamic environment, and who are always ready to face new challenges.

You need to:

- Be ready to take responsibility for your designs, installations and management
- Like solving technical problems and challenging the status quo
- Enjoy developing creative solutions in design and construction within the bounds of fundamental principles, technical standards, and safety limits to come up with the best way of doing things.

Civil engineering in a rail environment offers career opportunities that can be field or office based or a combination of both.

What subjects should a civil engineer study at university to have a career in rail?

Civil engineers should have a sound knowledge of civil engineering principles. Those engineers, who wish to specialise in geotechnical engineering or in bridge design and construction in a rail environment, should study subjects relevant to these disciplines. For engineers wanting to specialise in track design, construction or maintenance there are few specific rail engineering courses available at tertiary institutions in Australia. The best way to learn about rail engineering in Australia is through on the job training and attending in-house courses.

For further information about RailCorp please visit **www.railcorp.nsw.gov.au**

To apply for further information about the Internship Program, please contact: graduate@railcorp.nsw.gov.au

CountryLink CityRail RailCorp

JB0678 Printed March 2006