



## Role Description

<b>Title</b>	Engineer - Mechanical and Civil	<b>Incumbent</b>	
<b>Reports to</b>	Engineering Maintenance Manager	<b>Date of Last Review</b>	10 March 2021
<b>Team</b>	Engineering	<b>Location</b>	Christchurch
<b>Direct Reports</b>	None	<b>Work Environment</b>	Office based Short-term work in Antarctica may be part of this role. Medical clearance is required.

### Organisational Context

Antarctica New Zealand is a Crown Entity established on 1 July 1996 under the New Zealand Antarctic Institute Act to develop, manage and execute New Zealand's activities in respect of Antarctica and the Southern Ocean.

Our overarching organisational goal is to continue to play an influential role in the kaitiakitanga (guardianship) of Antarctica and the Southern Ocean as a natural resource devoted to peace and science. We do this by facilitating high-quality scientific research in Antarctica and supporting initiatives to protect the environment. Other key activities include the operation of Scott Base; managing logistics to, from and within Antarctica; and raising public awareness of the global significance of the continent and surrounding Southern Ocean. Antarctica New Zealand is going through an exciting period of change.

In 2018, we were appointed as the host of the Antarctic Science Platform - a \$49 million Antarctic research fund over seven years. In 2021, an implementation business case has been submitted in the Government's Budget 2021, requesting funding for a seven year project to redevelop the buildings and facilities at Scott Base which are nearing the end of their functional lives.

The Engineer - Mechanical and Civil is responsible for supporting the Engineering Maintenance Manager in the development, maintenance and operation of Antarctica based assets and infrastructure. This role is responsible for a group of assets, which includes but is not limited to technical expertise and currency, training and induction of staff, ownership of standard operating procedures, lifecycle planning, inventory requirements, risk and hazard management.

This role is responsible for efficient planning with an emphasis on safety, to manage, maintain and develop Antarctic-based assets, plant, equipment and infrastructure. The Engineer - Mechanical and Civil works closely with the Engineering Planner to coordinate staffing, resourcing and operational requirements of the asset.

The role is based in Christchurch and reports to the Engineering Maintenance Manager. The exception is when the incumbent is located at Scott Base in which case staff/cultural/operational matters will be reported to the Engineering Supervisor. Technical and engineering issues will be reported to the Engineering Maintenance Manager.

### Business unit purpose

The Engineering team is responsible for the safe and effective management of all Scott Base facilities, infrastructure and assets, as well as delivery of the Scott Base Redevelopment project. This project will ensure that Scott Base is able to support world-class science for the next 40 years.

The Information Technology (IT) function manages the organisation's IT infrastructure and assets across the whole organisation, including Scott Base, science events and the Christchurch office.

## Role purpose

To ensure the safe and sustainable operation, maintenance and improvement of Antarctic based civil and mechanical assets.

## Work of role

### Asset Management

- Provide professional engineering advice and technical support for long term operation and maintenance strategies and plans, and asset compliance, including the ongoing development of asset management plans.
- Provide engineering advice on:
  - Scott Base buildings and architecture, and Antarctic based remote structures
  - Systems engineering
  - Fuel Systems
  - Water treatment, distribution and storage facilities
  - Waste water treatment
  - Heating, ventilation and air conditioning
  - Vehicles, including heavy plant, specialised snow vehicles and sleds
  - Building management systems and other control systems.

### Engineering Systems

- Oversight of system operations, including setting and monitoring of KPIs, responding to deviations / emerging issues and development of operating procedures.
- Lead projects on a varying scale, including problem scoping, solution development and design, budget preparation and control, planning and coordination, construction supervision and commissioning.
- Develop and maintain asset management plans for Scott Base assets.
- Manage planned asset maintenance schedules in the asset management tool. Work with the Engineering supervisor to ensure assets are being maintained appropriately.
- Produce professional documentation including reports, business cases, investigations and proposals. Quality assurance through "fit for purpose" and "right first time" principles.

### Leadership

- Uphold organisational policies, demonstrate high standards of professionalism and role model the values of the organisation.
- Develop and contribute to high performing individuals, teams and cross functional relationships.

### People Management

- Supports the Engineering Supervisor and Engineering Maintenance Manager to monitor performance of the Scott Base Engineering team related to asset management work and provide timely feedback.
- Supports the Engineering Planner to recruit the Scott Base Engineering team and ensure selection criteria supports specific operational and asset management requirements.
- Supports the Engineering Planner to deliver role specific training, oversight of on ice inductions and competence in key roles and activities as defined in the training matrix.

### Health, Safety and Environmental Management

- Fulfil accountabilities as documented in the Health, Safety and Environmental Management systems.
- Leads or supports HSE investigations and champions HSE improvement initiatives.

### Other tasks

- Represent Antarctica New Zealand in developing and maintaining effective relationships with engineering specialists throughout New Zealand and overseas.

- Ensure that relevant documents and records for business activities are created and maintained, and that all legislative requirements for record keeping are met.
- Any other tasks as assigned by the Engineering Maintenance Manager or GM Engineering.

### Key challenges

- Ensure safe operations at Scott Base by supporting training, induction and providing expert engineering advice to the Scott Base engineering team.
- Maintain current knowledge of complex Scott Base engineering systems by living and working at Scott Base. This seasonal deployment is expected to be in the order of four weeks.
- Remotely manage complex high value assets and critical life support systems at Scott Base, ensuring they are always maintained and operated as a fit for purpose.
- Maintain technical currency through proactive involvement in industry events, developing industry contacts and membership of industry working groups.

### Key functional relationships

<b>Internal</b>	<ul style="list-style-type: none"> <li>• GM Engineering</li> <li>• Engineering Planner</li> <li>• Engineering Team at Scott Base</li> <li>• GM Antarctic Operations</li> <li>• Planning and Delivery Manager</li> <li>• Engineering Facilities Planner</li> <li>• Health &amp; Safety Manager</li> <li>• Environmental Manager</li> </ul>
<b>External</b>	<ul style="list-style-type: none"> <li>• Event Staff</li> <li>• Engineering Consultants, Contractors, Suppliers</li> <li>• Other Antarctic programme operational staff</li> </ul>

### Minimum capability necessary to work to role

Capability area	Description
<b>Qualifications, Certificates and Memberships</b>	<ul style="list-style-type: none"> <li>• Engineering Degree (four year degree or equivalent) qualified in mechanical, chemical or civil engineering or relevant trade qualification with minimum 10 years' experience.</li> <li>• Project management qualification</li> </ul>
<b>Knowledge, Skills and Experience</b>	<ul style="list-style-type: none"> <li>• Asset lifecycle management</li> <li>• 5 years of systems engineering experience including compliance requirements for: <ul style="list-style-type: none"> <li>○ Water treatment and distribution</li> <li>○ Wastewater treatment</li> <li>○ Pressure equipment, cranes and passenger ropeways</li> <li>○ Fuel storage and handling systems</li> </ul> </li> <li>• Demonstrated project management experience</li> <li>• Leading teams onsite and remotely from an office</li> <li>• Proven ability to maintain productive relationships with a diverse range of stakeholders.</li> <li>• Operational experience in remote and challenging environments</li> <li>• Understanding of and commitment to tikanga and Treaty of Waitangi principles</li> </ul>

	<ul style="list-style-type: none"> <li>• Computer literacy, e.g. Word, Excel, Asset Management and Project Management software.</li> <li>• Stakeholder management / professional relationships</li> <li>• Contract management and procurement process</li> </ul>
<b>Judgement, temperament and influence</b>	<ul style="list-style-type: none"> <li>• Patience</li> <li>• Discretion</li> <li>• Perseverance</li> <li>• Communicator</li> </ul>

**Antarctica New Zealand values**

<p><b>To honour our obligation to Antarctica:</b></p> <ul style="list-style-type: none"> <li>• We are passionate about what we do</li> <li>• We care for each other and the environment</li> <li>• We work together</li> <li>• We act with integrity</li> <li>• We aspire to the highest standards</li> </ul>
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**ROLE AUTHORISATIONS**

I confirm that this Role Description accurately describes the work of the Engineer - Mechanical and Civil:

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GM Engineering

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Date

I accept this Role Description accurately describes the work of the role for which I am accountable:

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Engineer - Mechanical and Civil

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Date

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