

Job Title:	Principal Engineer
Department:	Industrial Innovation
Last Updated:	27/08/2025
Version:	1

ROLE TITLE: Principal Engineer – Industrial Adoption
Reports to: Head of Engineering – Industrial Innovation

Direct reports including contractors: None

Budget: None

Key relationships:

- Reports into, collaborates with and acts as a technical advisor/influencer to Head of Engineering for Industrial Innovation
- Advises/ influences on technical strategy / road-mapping
- Advises / influences Chief Engineers and Heads of Delivery
- Represents and advocates for NCC at industrial events and forums
- Engages and collaborates with academia and industry

ROLE PURPOSE:

- To lead, review and establish technical engineering tasks and services in line with business requirements. You will take a strategic view and influence technical and service road-mapping activities.

MAIN ACTIVITIES:

Manufacturing Business Transformation:

- Lead diagnostic assessments of customer operations to identify digitalisation opportunities that drive productivity gains and enable sustainability improvements.
- Shape and guide integrated digital transformation projects that result in successful adoption of advanced technologies.
- Design and implement digitally enabled solutions such as real-time process flow monitoring, data-driven value stream mapping, predictive decision-making, and digital tools for tracking carbon/energy performance.
- Define and deploy digital manufacturing technologies (e.g. IoT, automation, advanced analytics, digital twins, MES/ERP integration) that enhance efficiency, resilience, and agility.
- Leverage digital systems to embed sustainable practices, enabling waste minimisation, energy efficiency, circular economy approaches, and sustainable material use through better data visibility and control.
- Establish and track digital performance metrics (dashboards, KPIs, analytics platforms) to evidence impact across cost, quality, productivity, and environmental outcomes.
- Translate emerging digital technologies and best practices into deployable, scalable industrial solutions tailored to customer needs.
- Provide technical specialist authority and guidance on digitalisation projects and capability/strategy development for industry adoption.
- Create and refine digital methodologies, toolkits, and processes, ensuring knowledge capture and dissemination to internal teams and external customers.
- Champion the publication of technical content and case studies showcasing the impact of digital adoption on lean productivity and sustainability outcomes, acting as an exemplar in technical communication and reporting.

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Service Development

- Identify emerging industrial challenges, technology trends, and policy drivers, and translate them into new adoption service offerings for industry.
- Lead the design and development of new business transformation services that integrate digital, lean and sustainability approaches.
- Create and refine delivery methodologies, toolkits, and frameworks to standardise and scale adoption services across customers.
- Pilot and validate new services with industry partners, capturing evidence of impact and lessons learned for wider rollout.
- Collaborate with research, innovation, and industrial partners to co-develop practical, deployable solutions.
- Establish processes and best practices for service delivery to ensure consistency, quality, and measurable outcomes.
- Contribute to thought leadership, case studies, and knowledge-sharing activities to promote new services internally and externally.
- Support the development of commercial models for new services in collaboration with business development teams.

Customer Interaction

- Establish effective partnerships both internally and externally. You will have broad technical networks nationally and/or internationally and be regarded as an expert in your specialist field.
- Represent the NCC in relevant industrial events and forums – championing NCC’s strategy and services
- Utilise your network of internal and external contacts to develop and influence strategic collaborative partnerships e.g. bringing together teams of experts on the grounds they have similar technical interests and may be able to collaborate in an innovative way to enhance NCCs delivery to its customers.

This Job Description is not an exclusive or exhaustive list of all activities that an individual in this position may be asked to perform. You may be required to undertake other responsibilities or activities, as requested by your line manager, to support your team or wider NCC activities.

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PERSON SPECIFICATION

Essential	Desirable
<u>Qualifications/Experience</u> ■ Masters in Engineering or other relevant degree/qualification ■ 10+ years of manufacturing business transformation experience ■ Significant experience in a manufacturing, engineering, or industrial operations environment, preferably across multiple sectors. ■ Demonstrable and significant experience in deploying digital tools and technologies in industrial settings ■ Demonstrable technical leadership in delivery of industrial projects or programmes. ■ Experience working directly with industrial customers, including engaging at senior levels (operations managers, directors, technical leaders). ■ Experience guiding and mentoring engineers, shaping capability, and ensuring high-quality technical delivery.	<u>Qualifications/Experience</u> ■ Chartered Fellow with a professional institute (IMechE, IOM3) ■ Practical application of lean methods (5S, Kaizen, SMED, Six Sigma) in combination with digital tools. ■ Experience applying digitalisation to sustainability goals (energy management, carbon tracking, circular economy solutions). ■ Familiarity with organisational change, technology adoption, and cultural transformation in industrial settings.
<u>Behavioural Competencies</u> ■ Sees the bigger picture of industrial transformation; aligns digital solutions with customer strategy and long-term business impact. ■ Commands respect as a subject matter expert; can influence senior stakeholders and peers through evidence and expertise. ■ Competently address engineering problems involving uncertainty, ambiguity, wide ranging and sometimes conflicting technical and non-technical factors ■ Demonstrable ability to conceptualise alternative engineering approaches and evaluates potential outcomes against appropriate criteria to justify an optimal or novel engineering solution	<u>Behavioural Competencies</u> ■ Knowledge of broader fields of science, engineering and technology from which new ideas and interfaces may be drawn and readily engages with professionals from these fields to exchange ideas and exploit collaboration opportunities. ■ Acts as a catalyst for cultural and organisational change in customer businesses, particularly around technology adoption. ■ Balances technical priorities with commercial realities; contributes to shaping service offerings and business models.

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Essential	Desirable
■ Demonstrates and champions the value of alternative and multi-disciplined viewpoints, academic advice and the importance of professional networking ■ Clearly explains technical concepts to both technical and non-technical audiences; produces high-quality reports and presentations. ■ Able to prepare exemplary engineering documents and presentations pertinent to the audience ■ Proven ability to seek out novel developments in your engineering specialisation and apply specialist knowledge and systematic processes to evaluate and justify potential ■ Able to represent the NCCs short-long term strategic technical engineering position to the broader community ■ Has professional gravitas, smart and confident as a technical ambassador of the NCC	