Daniel Kelly CEng MIMechE

Independent Mechanical Engineering Consultant

Technical Leadership for Complex, High-Risk Engineering Projects

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Professional Profile

Chartered Mechanical Engineer with 10+ years' experience delivering complex mechanical systems across nuclear, defence and large-scale infrastructure projects. Specialist in safety-critical lifting systems, remote handling technologies and kinetic architecture. Proven track record leading multidisciplinary engineering teams from concept through manufacture, testing and commissioning.

Key Achievements

- Chartered Engineer (CEng), Institution of Mechanical Engineers
- Led engineering development of a first of type retractable roof sealing system – Kai Tak Sports Park, Hong Kong
- Led engineering development of one of the world's largest pivoting stadium seating systems – Kai Tak Sports Park, Hong Kong
- Delivered multiple remote handling systems for the European Spallation Source nuclear research facility
- Led multidisciplinary teams delivering complex engineering projects up to £15M value

Core Expertise

Engineering Leadership
- Technical leadership for complex engineering project
- Multidisciplinary team leadership (mechanical, electrical, software)

Engineering Delivery
- Concept design through to commissioning
- Manufacturing oversight and supplier quality assurance
- Testing, installation and system validation

Safety-Critical Systems
- Nuclear remote handling systems
- Mechanical systems in highly regulated environments
- Risk management and design assurance

Technical Specialisms
- Kinetic architecture and moving structures
- Mechanical system integration
- Finite Element Analysis and advanced CAD design

Selected Project Experience

Detailed Case Studies and Testimonials: https://www.dskengineer.com/projects

Kai Tak Sports Park – Hong Kong

World's Largest Pivoting Seating System & Retractable Roof Sealing Mechanism

Role: Technical Lead / Engineering Leader

Delivered engineering leadership for the development and implementation of one of World's Largest Pivoting Seating System & Retractable Roof Sealing Mechanism

Key Contributions:
- Led integration of the pivoting seating system enabling 16 rows of seating to rotate up the end of the pitch.
- Coordinated mechanical, hydraulic and electrical systems to ensure seamless system operation.
- Developed and validated four innovative sealing systems for the retractable roof to provide acoustic isolation and weather protection.
- Led prototype testing and performance validation prior to full manufacture.
- Oversaw international manufacturing across facilities in China and Spain.
- Directed installation, commissioning and final system testing in Hong Kong.

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Project Experience Continued

European Spallation Source (ESS) – Sweden

Remote Handling Systems for High-Radiation Environments

Role: Lead Mechanical Engineer

Delivered concept-to-detail design for complex remote handling systems used within a high-radiation research facility.

Key Contributions:

- Led design and development of seven remote handling systems.
- Designed 21 specialised lifting attachments for radioactive component handling.
- Ensured designs met stringent nuclear safety and reliability requirements.
- Provided manufacturing support and supplier oversight during fabrication.
- Supported testing and validation of systems prior to deployment.

Professional Experience

DSK Engineering: 2025 – Present

Role: Founder & Engineering Lead

Specialist mechanical engineering consultancy providing crane and lifting equipment expertise to nuclear and complex infrastructure projects.

Current engagement: ESS — Remote Handling Hoists Programme

Role: Crane Specialist Consultant

Key Contributions

- Acted as Crane Specialist Consultant, maintaining design intent and safety compliance for safety-critical lifting systems.
- Supported manufacture, testing, and commissioning of remote handling hoist systems.
- Reviewed and approved design modifications during manufacture.
- Responded to technical queries from manufacturing and test teams.
- Produced and reviewed engineering documentation, including FAT procedures, O&M manuals, and design substantiation reports.
- Defined special testing requirements for safety-critical lifting operations.
- Updated engineering drawings and CAD models to reflect approved design changes.

Kinetic Solutions Group (KSG) - 2016 – 2025

Role: Engineering Leader (2021 – Present)

Lead multidisciplinary teams delivering complex engineering systems across infrastructure, stadia, nuclear and defence sectors.

Responsibilities include:

- Leading engineering teams across mechanical, electrical and software disciplines
- Delivering complex projects ranging from £0.5M to £15M
- Managing supplier quality, testing programmes and installation activities
- Providing technical leadership and risk management for critical projects

Education & Professional Registration

CEng – Institution of Mechanical Engineers (2022)
MSc Advanced Engineering & Management – Sheffield Hallam University (Distinction)
BSc (Hons) Sport Technology – Sheffield Hallam University

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