

# ENGINEERING DESIGN

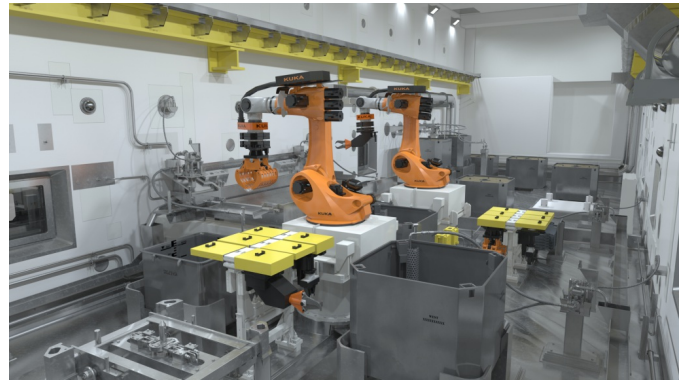
## MECHANICAL ENGINEERING

Our mechanical engineering department offers a complete design and development service and is able to provide fully substantiated design solutions to meet our customers' requirements.

We provide the following mechanical project life cycle capabilities and areas of expertise:

### Project Life Cycle Capabilities

- ✓ Scope Definition
- ✓ Front End Engineering Design
- ✓ Optioneering / Feasibility Studies
- ✓ Concept Design
- ✓ Scheme Design
- ✓ Detailed Design for Manufacture
- ✓ Finite Element Analysis (FEA)
- ✓ Design Risk Assessments
- ✓ Manufacture Specifications
- ✓ Works Test Documentation
- ✓ Installation Documentation
- ✓ Commissioning Documentation
- ✓ Site Surveys
- ✓ Asset Care
- ✓ Technical Files
- ✓ CE Marking



### Areas of Expertise

- ✓ Plant Layout and Process Evaluation
- ✓ Mechanical Handling
- ✓ Material, Powder and
- ✓ Size Reduction
- ✓ Special Purpose Machinery
- ✓ Handling and Lifting



- ✓ Liquid Waste Handling
- ✓ Remote Handling
- ✓ Remote Operation and Maintenance
- ✓ Decommissioning
- ✓ Equipment
- ✓ Glovebox Containments
- ✓ Piping and Building Services
- ✓ Research and Development

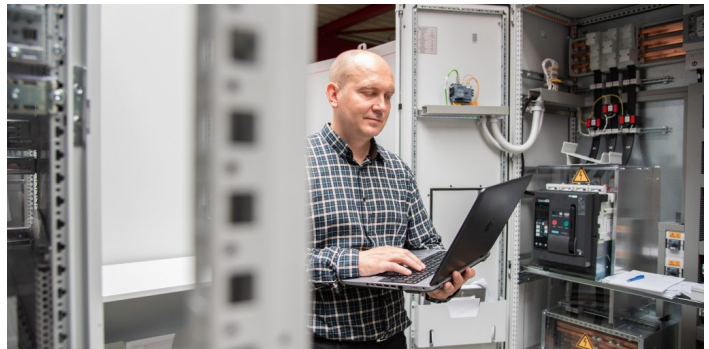
## CE&I ENGINEERING

Our CE&I engineering department offers robust, fit for purpose design with respect to control and instrumentation, electrical installations and programable electronic systems.

We offer the following CE&I project life cycle capabilities and areas of expertise:

### Project Life Cycle Capabilities

- ✓ Scope Definition
- ✓ Front End Engineering Design
- ✓ Engineering / Design Feasibility Studies
- ✓ Optioneering Studies
- ✓ Concept Design
- ✓ Scheme Design
- ✓ Detailed Design for Manufacture / Installations
- ✓ Design Risk Assessments
- ✓ Procurement Specification
- ✓ Works Test Documentation (Factory & Site)
- ✓ Operation and Maintenance Documentation
- ✓ Installation Documentation
- ✓ Commissioning Documentation
- ✓ Site Surveys
- ✓ Asset Care
- ✓ Technical Files



### Areas of Expertise

- ✓ Equipment and Cable Installation (in compliance with BS7671)
- ✓ Power Distribution Design (up to 400V AC)
- ✓ Cable and Fault
- ✓ Process Instrumentation
- ✓ Radiological Instruments
- ✓ Hardware / Hardwired Control Systems
- ✓ Support in Specification



- ✓ Calculation (Utilising Amtech Pro Design)
- ✓ Lighting Systems (Utilising Dialux Modelling)
- ✓ Building Services
- ✓ Earthing and Lightning Protection
- ✓ and Design of PES (Programmable Electronic Systems) and SCADA (Supervisory Control and Data Acquisition) systems
- ✓ Building Access and Security Systems
- ✓ Engineering Safety Design and Substantiation (In accordance with IEC 61508)
- ✓ Nuclear Cranes

## HVAC / BUILDING SERVICES

We have a well established nuclear HVAC and building services department, the capabilities of which include:

- ✓ The design of containment ventilation systems for nuclear facilities.
- ✓ Design substantiation / justification of nuclear ventilation systems providing safety functions.
- ✓ The design of heating, ventilation and air-conditioning systems for commercial and industrial buildings, including comfort and close control applications.
- ✓ The design of steam heating systems for commercial and industrial buildings.
- ✓ The design of wet heating and cooling systems, including Low Pressure Hot Water (LPHW) and chilled water.
- ✓ The design of domestic water systems.
- ✓ The design of commissioning strategies and production of commissioning documentation.
- ✓ Investigation and diagnosis of issues affecting the operation of mechanical building services systems.



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