

PROFILE

Senior Mechanical Design Engineer with 12+ years' experience across the UK nuclear, defence and process sectors, spanning the full asset lifecycle, working within decommissioning, R&D facilities, operational laboratories, rig halls, plants, new builds, manufacturing facilities and defence programmes.

Specialist in the design and substantiation of sealed containments, fume cupboards, mechanical handling equipment and remote handling interfaces, process systems and the nuclearisation of equipment.

Leads full work packages from concept through to close-out, with accountability for cost estimating, schedule, technical delivery, change and risk control. Provides technical checking and mentoring across project teams, supporting a handful of engineers and contributing to substantiation activities on projects ranging from small modifications to a £1.5B programme.

KEY EXPERIENCE

Regulated Engineering Delivery

Requirements management, compliance evidence, configuration control and multidisciplinary interface management, in line with CDM, PUWER, LOLER, BS8888 and ISO GPS/GD&T standards.

Design Substantiation & Safety

Design basis documentation, calculations and technical reports; safety case support, ALARP demonstration, HAZOP/HAZID input, FMEA and design review close-outs.

Mechanical Design

3D modelling, BIM management, P&IDs and general arrangement drawings, as-built and manufacture drawings, BOMs, and the checking and approval process.

Process & Operational Facilities

Design and modification of process systems and plant, including legacy water systems, tank and pipeline replacement, HVAC and air handling units; gained supporting live nuclear laboratories, workshops, rig halls and operational facilities.

Lifecycle Experience

Feasibility, optioneering, concept and detailed design through to manufacture support, installation, commissioning support, through-life maintainability and decommissioning.

RECENT PROJECTS

Containment & Mechanical Handling Work Packages | 2023–Present

Reporting to a Principal Engineer, delivering full technical work packages (technical documents, drawings, HAZOPs/HAZIDs, design gates, optioneering) for single containment systems to strict regulatory standards, including direct client-facing engagement. Led a human factors/maintainability investigation early in the project that identified a design unable to meet maintenance requirements, resulting in a full project restart and design change. Subsequently delivered the mechanical handling work package for transfer of a delicate workpiece, and moved into a client-facing role supporting design and nuclearisation of a lathe.

Legacy Water System Repurposing, Springfield, Preston | 2022

Second-in-command (effectively project lead) on the recommissioning of a redundant roof-space water tank on the clean side of an operational plant. Identified and resolved a Legionella risk from prolonged stagnant water in a warm plant environment, then led the tank's repurposing and reconnection to sinks/showers, including 2D CAD design, P&IDs, as-built drawing updates, and coordination with shop-floor teams and supporting engineers.

Small Works Portfolio, Preston | 2021–2023

Ran a portfolio of small-scale repurposing projects for existing lab equipment within live, operational laboratories, working to tight budgets and deadlines. Devised practical, low-cost adaptation solutions to reuse existing equipment, including installation of a new HVAC system and repurposing of a heat exchanger inside a fume cupboard for slow, multi-day sample heating. This involved working with a legacy 20-year-old controller - obsolete, undocumented, using outdated protocols and with no manufacturer support, requiring first-principles verification of its safe and reliable operation to meet nuclear industry safety and compliance standards before use. Delivered as-builts, P&IDs and calculations, drawing in additional engineering support as needed.

Replacement Analytical Project (RAP), Sellafield – £1.5bn programme | 2018–2021

Mechanical Engineer on a major multidisciplinary programme replacing analytical laboratory capability at Sellafield's Central Laboratory. Delivered 3D BIM modelling, drawings, calculations and lab layouts for alpha containments and mechanical equipment, and led interface management across Mechanical, EC&I and HVAC disciplines. Supported HAZOPs and design reviews, including chairing/minuting sessions and running design software live in-session. Produced supporting technical documentation across the design lifecycle.

EMPLOYMENT HISTORY

Senior Mechanical Design Engineer

May 2023 - Present

NIS Ltd, engaged on behalf of Amentum Holdings Inc.

(Contracting via. Umbrella 2023 – 2024; Outside IR35 freelance 2024 – present)

- Lead mechanical design of containment systems, gloveboxes and mechanical handling equipment from concept through to detail design, defining equipment layouts and technical interfaces.
- Deliver complete design packages: feasibility studies, design substantiation, specifications, calculations, 3D models, drawings and supporting technical reports.
- Coordinate multidisciplinary design reviews and act as technical interface with stakeholders, providing assessments and engineering justification to support review, acceptance and close-out.

NNL (National Nuclear Laboratory)

May 2014 – 2023

Senior Mechanical Engineer

Westinghouse LLC, Springfield | 2021 – 2023

- Delivered mechanical engineering support across a live nuclear facility spanning laboratories, workshops and rig halls.
- Restored degraded mechanical systems to operational condition, including laboratory equipment, HVAC systems, air-handling units, water storage and distribution, and pipework routes.
- Defined scopes and estimates, supported procurement, coordinated suppliers and disciplines, and guided developing engineers.

Mechanical Design Engineer

Seconded to Sellafield Ltd (2018–2021) and NT Precision, Cockermouth (2017) | 2016 – 2021

- Delivered multidisciplinary design for approximately 23 alpha-containment assemblies on the Replacement Analytical Project (RAP) at Sellafield, integrating internal equipment, process services, posting arrangements, operator access, lifting, delivery and installation interfaces. Coordinated design interfaces within a large

multidisciplinary team in a complex, highly regulated project environment. Produced 3D models, drawings and engineering documentation, supporting BIM work across multidisciplinary teams.

- Short-term client-facing appointment with NT Precision during manufacturing, clarifying requirements, resolving queries and supporting delivery.
- Progressed into design delivery at NNL directly, producing 3D models, drawings and controlled engineering documents while supporting client liaison and multidisciplinary issue resolution.

Mechanical Craftsman

Westinghouse LLC, Springfield | 2014 – 2016

- Built a practical foundation in a live alpha/beta facility through manufacture, installation, maintenance and commissioning support for gloveboxes, fume cupboards, pumps, HVAC and fire ducting, emergency showers, tanks, and gas and liquid process services.

EDUCATION

University of Central Lancashire (UCLAN)

BEng Mechanical Engineering (Hons) - IMechE Accredited

Completed: HND, HNC, ONC, Level 3 BTEC in Engineering

In-progress

CEng IMechE (Chartered Engineer)

SOFT SKILLS

Software

Autodesk Inventor, CATIA, Creo, SolidWorks, AutoCAD (LISPs), Vault, Siemens NX, Microsoft Office, Advanced Excel, VBA/Macros, Mathcad.

Leadership & Mentoring

Leads work packages and small project teams, briefing and directing supporting engineers as required. Mentors developing engineers, guiding technical approach and supporting their progression.

Stakeholder & Client Management

Acts as technical interface with clients and stakeholders across multidisciplinary programmes, from client-facing design reviews to day-to-day coordination with shop-floor teams, suppliers and other disciplines.

Problem-Solving

Applies first-principles thinking to unfamiliar or undocumented problems for example, verifying the safe operation of obsolete, undocumented equipment for continued use in a regulated nuclear environment.

Communication

Proactive, closed-loop communication across technical teams - chairing and minuting HAZOPs and design reviews, raising forward-thinking technical questions early, and coordinating issue resolution across disciplines.

ADDITIONAL

SC Clearance: Previously held - willing to undergo clearance again if required.

Outside of work, I enjoy walking, golf (badly), weekly five a side and weight training. I also try to be a reader of both fiction and non-fiction, a keen film enthusiast and highly enjoy the occasional pint of Boddingtons (or Guinness/Larger if not cask) with friends and family.