

Curriculum Vitae; Electrical & Mechanical Engineer (2026)

Christopher Rooney	chrisrooney81@hotmail.co.uk	www.roontech.co.uk
---------------------------	--	--

Qualifications		Skills			
Electrical	Mechanical	Software	Design	Technical	Research
18th Edition IPAF/FLT Part P 2346 EWA Installation	HND BSc MSc 90% F-Gas J11 Installation	CAE/CAM Fusion360 Inventor Autocad SolidWorks	Render Creative Drawings Animation Manufacture	Technical Writing Presentations Microsoft 365 Google Docs Specification	Maths Project Procurement Decision Making Tools Customer Requirements

Major Experience		Minor Experience (CAD)				
Electrical	Mechanical	CAM/CAM	Inventor	SolidWorks	Fusion360	Autocad
25 years	10 Years	1 Years	1 years	2 Years	8 years	3 Years

Engineering Profile

Multi-Skilled Mechanical Design Engineer with Electrical Installation background specialising in project engineering, sustainability and efficiency. Design works include machine, component, product, tool and FEA. Ability to program 3D printers, and CNC machines creating tool paths for the milling of Moulds and Components. A clear understanding of health and safety, safety factors, environmental impacts and life cycles aided by hand and CAD calculations. Ability to produce detailed technical documentation for both M&E, incorporating standards such as ISO, SABRe and BS EN for clients and staff based on research and customer requirements. For evidence, please see my website, designs range from pharmaceutical to hospitality. My best asset is combining both disciplines with creativity producing unique outcomes.

Current Positions: Advanced Smoke Group (Design Engineer) (February 2026 - present)

Design Engineer responsible for the design, modelling, and technical coordination of both pressurised and non-pressurised smoke control systems. The role combines engineering design with practical system integration, ensuring compliance with industry standards, safety regulations, and project-specific performance criteria.

Pressurised & Nonpressurised Systems

1. Produce detailed 2D and 3D CAD drawings for smoke control systems, including ductwork layouts, fan arrangements, damper positions, and equipment schematics.
 2. Develop coordinated models that integrate with architectural, structural, mechanical, and electrical disciplines. (BIM)
 3. Detailed project specifications and documentation which help clients, maintenance, electricians and mechanical fitters locate equipment efficiently within multi-storey buildings.
 4. Design stairwell, lobby, and corridor pressurisation systems in accordance with EN 12101 and relevant building regulations.
 5. Calculate required pressure differentials and airflows to maintain safe escape routes during fire conditions.
 6. Design natural and mechanical smoke extract systems for car parks, atria, corridors, and commercial spaces.
 7. Determine extract rates based on occupancy, fire load, and regulatory requirements.
 8. Produce layouts for extract points, inlet air paths, and control interfaces.
 9. Coordinate system zoning, damper logic, and fire strategy integration.
 10. Develop new technologies reducing fire risk.
-

ROONTECH Projects: Project Engineer (ROONTECH LTD) (Simultaneous with Current Position)

1. Bespoke Injection Mould Machine designed and built to produce parts creating a Micro Manufacture business for hobbyist/small business looking to remove expensive external manufacture. (Prototype)
 2. Laser-Line Guidance Template aids Electricians marking out Sockets and Switches. (Ready to buy)
 3. Wireless Magnetic Charger that fits the space or replaces a Double Socket Outlet removing clutter and the requirement for USB's. (Prototype)
 4. CNC/Injection Mould Machine aiding the process of affordable low risk Prototypes removing external manufacture for small businesses and hobbyists. (Prototype)
-

Further Education

Loughborough University, (2020 – 2021), MSc, Engineering Design, 90% complete. (COVID prevention)
Loughborough College & University of Derby, (2015 – 2018), HND/BSc, Mechanical Engineering.

MSc Modules Level 7

- Advanced CAD: Parametric Vice Design
- Innovation Project: Compress-E-Bin
- Engineering Design Methods: Ambulance/Axle
- Structural Analysis: Bolt Pattern/Von Mises
- Final Project: Nanoparticle Injection System

BSc Modules Level 6

- Independent Project: Graphene Filter
 - Advanced Mechanics: Turbine Blade
 - Applied Thermodynamics: Otto/Rankine/Fridge
 - Innovation/Invention Project: LED Power
 - Advanced CAD Design: Lathe Report
-

HND Modules Level 5

- Project Die: Gear Train Test Rig (GT-TR)
- Mechanical Principles
- Further Analytical Methods for Engineers
- Fluid Mechanics
- Heat Transfer & Combustion
- Advanced Mathematics for Engineers
- Advanced CAD

HND Modules Level 4

- Mathematics for Engineers
 - Business Management
 - Statistical Process Control
 - Materials Engineering
 - Advanced Mathematics
 - Manufacturing Process
 - Engineering Science
-

Brett Landscapes Barrow Road, Barrow, LE12 8LX

June 2025 – February 2026

M&E Engineer (Employed)

Maintenance role including but not limited to; PLC, proximity switches, electrical installation, mechanical assembly, PPM, PM, fault finding, parts order and replace, CMS system experience, motor and inverter testing whilst working as part of a CI team.

Forst UK Dartford Road, Leicester, LE2 7PR

August 2024 – February 2025

Technical Design Engineer (Employed)

1. The complex study and design of broaching tools using Autocad and Inventor CAD packages.
2. Providing Manual/CNC grinding operatives with design packs to produce tools/kits.
3. The procurement of PM Steels with full traceability measures due to steel predominately being used to manufacture broach tools for Rolls Royce (RR) jet engine turbine discs, and nuclear submarines.

Working directly under the senior Broach Designer creating drawings, drawing packs and associated documentation for precision tools/kits required for the Defence and Aerospace industry. Bespoke steel bars are sourced using RR approved suppliers one year in advance to meet their deadlines. A lean manufacturing environment creates a challenging role dependent on organisation and mathematics.

Self-Employment History

Self Employed and Subcontract work as an Installation Electrician. (2006 – 2024 – Present)

- Bostik
- NHS
- MOD
- ROONTECH LTD (RES)
- Fuzion Electrical
- 4 Energy

Bostik Ulverscroft Road, Leicester, LE4 6BW

June 2023 – February 2024

Electrical/Mechanical Maintenance Technician (Contractor)

Daily tasks include, but are not limited to, reactive and pre-planned maintenance, machine repairs and machine servicing. In-depth, repair or replacement of Motors, PID's, Proximity Switches, general power, lighting, fault finding and material procurement. It also included mechanical PPM's and assemblies.

Installation Electrician

September 2004 – February 2023

Electrical Installation (Contractor)

All types of domestic installations including ring mains, lighting, heating systems, dedicated supplies, and external supplies to buildings such as pool houses and garages. Other tasks include industrial and commercial projects including cable containment systems, trunking and conduits, emergency lighting, fire alarm systems, wiring of distribution boards, test and inspect and critical opinion of results. Organising electricians and apprentices, liaising with architects and site managers to meet deadlines.

J.H.R. Electrical, 11 Pauline Avenue, Leicester, LE4 7RB.

June 2000 – October 2004

Electrical Improver/ Electrician

Electrical Engineering Education

18th Edition C&G 2382, e-Qualified, Wellingborough (2021)

17th Edition C&G 2381, Leicester College (2009)

Part P, VRQ Level 2, Builder Training Centre, Croydon. (2007)

16th Edition C&G 2351, Abbey Park Campus, Leicester. (2001 – 2004)

- Ensure safe electrical site working
- Install electrical wiring systems, wiring enclosures and equipment
- Connect electrical wiring systems, enclosures and equipment
- Prepare to install electrical wiring systems, wiring enclosures and equipment
- Inspect and test and commission electrical installation
- Diagnose and correct electrical faults

Electrical Installation Engineering Levels I, II, III

Interests & Activities

Creative Design/Concept Design/Innovation/Invention/Sustainability/Mentoring my Son

www.roontech.co.uk