

Gary Brooks, BSc (Hons), MSc, CEng, PE, CSci, FDS, FWeldI, FIMMM, MInstNDT, AICorr, ACI Arb, Cert.-IWE/EWE,

CUBS (Cert.), MEWI (Full)



Independent Consulting Expert and Forensic Engineer

Professional Profile

Gary Brooks is a Chartered Engineer (CEng), Licensed Professional Engineer (USA), Chartered Scientist (CSci), Certified Civil Expert Witness, and Consulting Expert with more than 30 years of experience spanning engineering, construction, manufacturing, quality assurance, forensic investigation, and dispute resolution. His expertise encompasses welding engineering, physical and mechanical metallurgy, corrosion, non-destructive testing, fabrication and manufacturing, quality assurance and quality control, and failure investigation. He is regularly instructed as an independent consulting expert and forensic engineer in arbitration, litigation, adjudication, insurance claims, and other forms of dispute resolution.

His career began in fabrication and welding, progressing from a labourer to fabricator and then welding roles, through to advanced coded welding positions supporting major construction projects, pipelines, industrial shutdowns, maintenance programmes, and new-build developments throughout the United Kingdom and Europe. This practical foundation provided first-hand experience of fabrication, construction, repair, inspection, and operational challenges across a wide range of industrial sectors and remains a defining feature of his professional background.

Building on this practical experience, he progressed into roles in welding engineering, materials and metallurgy, non-destructive testing (NDT), quality assurance and quality control, and technical leadership. Over the course of his career, he has served as Welding Technician, Lead Quality and Technical Welding Engineer, Group Welding Engineer, Welding Engineer, Lead Technical Engineer, Welding Engineering Manager, Global Technical Programme Manager, Technical Manager, Subject Matter Expert, Principal Welding Engineer, and Technical Authority. These positions have included responsibility for both site-based construction activities and global manufacturing supply chains, covering the full project lifecycle from design and procurement through fabrication, construction, inspection, commissioning, operation, failure investigation, and dispute resolution.

Throughout his career, he has provided technical governance and assurance for major projects within the nuclear, defence, oil and gas, petrochemical, energy, aviation, marine, transportation, manufacturing, and infrastructure sectors. His responsibilities have included the review and approval of welding procedures, personnel qualifications, non-destructive testing procedures, inspection and test plans, technical queries, concessions, non-conformances, repair methodologies, materials selection, corrosion management strategies, and compliance with international codes, standards, and project specifications. He has led multidisciplinary engineering, quality, inspection, and technical teams and served as the designated technical authority for multi-billion-pound programmes involving both on-site activities and complex international supply chains.

His project experience extends across a diverse range of facilities and asset types, including nuclear power stations, nuclear defence facilities, oil and gas installations, refineries, petrochemical facilities, fossil fuel and biomass power stations, combined cycle gas turbine plants, heat recovery steam generators, waste-to-energy facilities, offshore wind developments, aviation fuel infrastructure, marine and naval assets, flood alleviation schemes, bridges, highways, tunnels, and other major infrastructure projects. He has worked extensively throughout the United Kingdom, Europe, the Middle East, Asia-Pacific, North America, and South America.

In addition to major industrial and infrastructure projects, his experience is directly applicable to commercial, residential, and insurance-related matters involving structural failures, building defects, water ingress, pipework failures, corrosion and material degradation, fabrication defects, construction quality issues, workmanship disputes, repair adequacy assessments, and insurance causation investigations. His ability to combine practical construction experience with engineering analysis, materials science, and forensic investigation provides a valuable perspective when assessing the technical causes of failures and disputes.

As a consulting expert and forensic engineer, he has been appointed on matters involving international arbitration, litigation, adjudication, mediation, expert determination, and insurance claims. His work includes preparing independent expert reports, joint expert reports, joint statements, technical reviews, forensic investigations, and root cause analyses. He has acted for both claimants and respondents and has experience supporting legal teams, insurers, corporations, and project stakeholders across multiple jurisdictions. He has also provided testimony and has experience with cross-examination.

His opinions are founded upon a combination of practical trade experience, engineering knowledge, scientific analysis, technical governance, project delivery, and forensic investigation. This breadth of experience enables him to assess engineering failures, construction defects, quality issues, and compliance matters from multiple perspectives and to communicate complex technical issues clearly and effectively to solicitors, barristers, insurers, loss adjusters, adjudicators, judges, arbitrators, and other non-technical decision-makers.

Qualifications and Accreditations

APAEWE	Advanced Professional Award in Expert Witness Evidence	2026
PE (USA)	Professional Engineer License (multi-state)	2026
BSc (Hons)	Non-Destructive Testing, Northampton University	2019-2026
CUBS	Cardiff University and Bond Solon, Certified Civil Expert Witness	2024-2025
IntPE (UK)	International Professional Engineer, Engineering Council and NCEES	2025
CEng	Chartered Engineer, The Welding Institute and The Engineering Council	2025
CSci	Chartered Scientist, Institute of Materials, Minerals, and Mining. The Science Council	2023
MSc	Welding Engineering, Cranfield University	2014-2017
Cert. IWE/EWE	Certified International and European Welding Engineer, The Welding Institute, International Institute of Welding, European Welding Federation	2009-2013
FDSc	Metallurgy and Engineering Materials, Leeds Beckett University	2008-2012

Professional Memberships

FWeldI	Fellow of The Welding Institute (TWI)	2025
FIMMM	Fellow of the Institute of Materials, Minerals, and Mining (IoM3)	2022
MInstNDT	Member of the Institute of Non-Destructive Testing	2024
MEWI (Cert.)	Certified Member (Full Member) of the Expert Witness Institute	2025
AlCorr	Affiliate Member of the Institute of Corrosion	2023
ACIArb	Associate Member of the Chartered Institute of Arbitration	2023

Continued Research

MSc-R	Research Project with Birmingham University – Metallurgy and Materials Detection and Evaluation of Pitting Corrosion in Steels Using Acoustic Emission
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Professional Scope

Gary Brooks provides consulting expert, forensic engineering, and technical investigation services across industrial, commercial, residential, and insurance-related matters. His experience extends from large-scale energy, infrastructure, manufacturing, and process facilities through to commercial property, residential property, construction quality, workmanship, material degradation, water damage, and failure investigations. He is regularly instructed by solicitors, barristers, insurers, loss adjusters, corporations, contractors, and project stakeholders to investigate technical failures, determine causation, assess compliance, and provide independent expert opinion.

Areas of Expertise

Welding Engineering	Physical and Mechanical Metallurgy & Materials
Materials Engineering	Damage Mechanisms & Fatigue & Fracture (Failure Modes)
Corrosion & Material Degradation	Non-Destructive Testing (NDT)
Quality Assurance & Quality Control	Fabrication & Manufacturing
Inspection, Testing & Verification	Failure Investigation & Root Cause Analysis
Pressure Retaining Systems	Structural Fabrication & Manufacturing Compliance
Contractor & Supply Chain Assurance	Codes, Standards & Regulatory Compliance
Infrastructure	

Sector, Asset and Facility Experience

Buildings, Property & Infrastructure

Commercial Buildings | Residential Property | Structural Steel Fabrication | Bridges & Highway Structures | Rail Infrastructure | Tunnels | Flood Defence Systems | Construction & Civil Engineering Projects

Energy & Power Generation

Atomic Weapons Establishment (AWE) | Nuclear Submarine Programmes | Nuclear Power Stations | Fossil Fuel Power Stations | CCGT Plants | HRSG Facilities | Biomass Facilities | Waste-to-Energy Facilities | Offshore Wind

Oil, Gas & Petrochemical

Oil & Gas Facilities | Refineries | Petrochemical Plants | Chemical Processing Facilities | LNG Infrastructure | Hydrogen Infrastructure | Surface Pipelines | Subsurface Pipelines | Process Plant Facilities

Manufacturing & Heavy Industry

Pressure Vessel Manufacture | Nuclear Component Manufacture | Fabrication & Manufacturing Facilities | Heavy Engineering | Industrial Process Equipment

Professional Experience

Expert Witness & Consulting Roles

2026 – Present	Consulting Expert and Forensic Engineer	Rimkus
2026 – Present	Forensic Engineer and Consulting Expert	APEX Applied Science & Engineering
2025 – Present	Consulting Expert	Vertex Engineering / CBBG
2023 – Present	Consulting Expert	HKA Global
2024	Consulting Expert	Diales Technical

Technical Authority & Management Roles

2023 – Present	Principal Engineer	Asset Integrity Engineering (AIE)
2022 – 2026	Subject Matter Expert (SME)	Costain
2018 – 2026	Technical Manager & SME	Bureau Veritas
2016 – 2018	Global Technical Programme Manager	GE Power / Field Core (GE Vernova)
2014 – 2016	Welding Engineering Manager	Alstom Power
2011 – 2014	Lead Technical Engineer	Rolls-Royce Civil Nuclear
2010 – 2011	Welding Engineer	Rolls-Royce Nuclear Submarines
2009 – 2010	Group Welding Engineer	Manoir Industries
2007 – 2009	Lead Quality & Technical Welding Engineer	Hi-Tech Fabrication

Practical Foundation

2005 – 2007	Welding Technician	Babcock International
2001 – 2005	Advanced Coded Welder	ABB, Alstom Power, Babcock
1999 – 2005	Lead Welder & Fabricator	Nuttall Marine
1993 – 1999	Labourer, Fabricator & Welder	Banfield Engineering

Geographical Experience

Over more than 30 years, Gary Brooks has supported projects, investigations, manufacturing activities, dispute resolution proceedings, and technical assignments across the United Kingdom, Europe, the Middle East, Asia-Pacific, North America, and South America.

Representative Countries:

United Kingdom | United Arab Emirates | Qatar | India | Malaysia | Singapore | Hong Kong | China | South Korea | Australia | Finland | Slovenia | Uruguay | Brazil | United States of America

Project Experience

BUILDINGS & INFRASTRUCTURE

HS2 Rail Project & National Highways, UK – Technical Expert

Insurance claim involving fabricated steel bridge structures for major UK transport infrastructure projects. Assessment of welding engineering, non-destructive testing, physical and mechanical metallurgy, fabrication quality, inspection records, quality assurance documentation, and technical causation.

Large Warehouse Roof Collapse, US – Technical Expert

Investigation into the collapse of a steel-framed warehouse (Maryland) during the construction phase. Assessment of structural fabrication quality, welding, materials performance, workmanship, construction records, erection activities, and technical causation.

Flood Defence Scheme, UK – Lead Welder & Fabricator

Lead welding activities across a 4km tidal flood defence infrastructure project. Responsibilities included structural steel fabrication, welding quality, site construction activities, QA/QC compliance, and technical support throughout installation.

Commercial Buildings & Construction Projects, UK – Welder, Fabricator, Welding Engineer and Technical Authority

Involvement in commercial construction projects covering structural steel fabrication, welding quality, construction workmanship, inspection activities, quality assurance systems, technical compliance, and standards verification.

Property Damage and Insurance Investigations, UK – Technical Expert

Assessment of materials performance, corrosion damage, fabrication quality, workmanship, inspection records, repair adequacy, technical causation, and construction quality issues in support of insurance claims and dispute resolution proceedings.

Bridges, Highways and Transportation Infrastructure, UK – Technical Expert / Technical Authority

Assessment of fabrication quality, welding compliance, metallurgy, inspection activities, quality assurance documentation, standards compliance, and construction quality associated with major transportation infrastructure.

NUCLEAR & DEFENCE

Atomic Weapons Establishment (AWE), UK – Technical Authority / Subject Matter Expert

Technical authority for multi-billion-pound defence infrastructure projects covering welding engineering, metallurgy, NDT, corrosion, heat treatment, protective coatings, inspection, fabrication, manufacturing quality, and supply-chain assurance.

Hinkley Point C Nuclear New Build, UK – Technical Manager & Subject Matter Expert

Responsible for welding engineering, quality assurance, technical compliance, vendor surveillance, inspection oversight, supply-chain assurance, and regulatory compliance across major nuclear construction activities.

Astute Class Nuclear Submarine Programme, UK – Lead Manufacturing Engineer

Supported manufacture of the Nuclear Steam Raising Plant (NSRP), including welding governance, procedure qualification, manufacturing assurance, ASME compliance, and nuclear fabrication activities.

Rolls-Royce Civil Nuclear New Build Programme, UK – Lead Technical Engineer

Development and validation of manufacturing and welding technologies supporting UK Nuclear New Build programmes and safety-critical nuclear components.

Nuclear Component Manufacturing Facilities – Welding Engineer / Technical Authority

Support for manufacture, qualification, inspection, technical governance, quality assurance, and compliance of safety-class nuclear components.

ENERGY & POWER GENERATION

GE Power Global Fleet – Global Technical Programme Manager

Global responsibility for welding governance, quality improvement programmes, repair reduction initiatives, failure investigation, procedure qualification, and ISO 3834 implementation across multiple power generation assets.

Alstom Power Global Fleet – Welding Engineering Manager

Global responsibility for welding engineering, procedure qualification, welder qualification, outage support, maintenance activities, new-build projects, offshore wind projects, and technical governance.

Al Layyah Combined Cycle Power Plant (CCPP), UAE – Corrosion & Materials Science Expert

International dispute concerning corrosion damage, environmental exposure, degradation mechanisms, and technical causation associated with gas turbine enclosure systems.

Jimah East Power Plant, Malaysia – Metallurgy & Corrosion Expert

Investigation of feed-heater tube degradation, corrosion mechanisms, material behaviour, and technical causation within a 2,000MW ultra-supercritical coal-fired power station.

Multiple Fossil Fuel Power Stations, Global – Welder, Engineer, Manager & Technical Authority

Outage, maintenance, repair, inspection, quality assurance, and new-build activities across numerous power generation facilities throughout Europe.

Combined Cycle Gas Turbine (CCGT) Facilities, Global – Welding Engineer, Manager & Technical Authority

Support for maintenance, construction, fabrication, inspection, repair methodologies, and quality assurance activities.

Heat Recovery Steam Generator (HRSG) Facilities, Global – Welding Engineer, Manager & Technical Authority

Governance of welding quality, fabrication, inspection, maintenance, repair methodologies, and technical assurance activities.

Biomass Facilities, UK & EU – Welding Engineering Manager / Technical Authority

Support for fabrication, maintenance, outage, inspection, quality assurance, and repair activities.

Waste-to-Energy Facilities, UK & EU – Welding Engineering Manager / Technical Authority

Support for welding governance, fabrication quality, inspection, maintenance, and technical assurance activities.

Offshore Wind Projects, UK – Welding Engineering Manager

Qualification of welding procedures and personnel supporting fabrication, construction, inspection, maintenance, and repair activities within offshore renewable energy projects.

OIL, GAS, PIPELINES & PETROCHEMICAL

RAPID Refinery & Petrochemical Development, Malaysia – Technical Expert

International arbitration involving duplex stainless-steel failure, welding engineering, metallurgy, NDT, fabrication quality, failure mechanisms, and root cause analysis.

TAURUS Pulp Mill Project, South America – Technical Expert

Assessment of quality assurance systems, fabrication quality, welding, inspection, documentation, and construction compliance.

BP Aviation Fuel Infrastructure, UK – Subject Matter Expert / Technical Authority

Technical authority for subsurface aviation fuel pipeline infrastructure, including welding engineering, metallurgy, NDT, fabrication quality, inspection methodology, and technical governance.

TNZ Hydrogen Infrastructure, UK – Subject Matter Expert

Hydrogen transportation infrastructure supporting welding engineering, metallurgy, NDT, fabrication quality, technical specifications, inspection activities, and compliance assurance.

Breagh Gas Field Pipeline Infrastructure, UK – Subject Matter Expert

Technical authority support covering fabrication, welding engineering, metallurgy, inspection, pipeline integrity, and compliance activities.

Oil & Gas Storage Tank Failure Investigation, Peterhead, UK – Technical Expert

Root cause investigation into corrosion-related storage tank failure involving materials degradation, inspection records, fabrication quality, and technical causation.

Refineries & Petrochemical Facilities – Engineer, Technical Authority & Expert

Support for fabrication, inspection, welding engineering, metallurgy, corrosion management, quality assurance, and failure investigation activities.

Chemical Processing Facilities, UK & EU – Technical Authority / Engineer

Support for fabrication quality, welding engineering, metallurgy, inspection, repair methodologies, and compliance activities.

LNG Infrastructure, UK – Welder, Engineer & Technical Authority

Construction, fabrication, inspection, welding engineering, and technical assurance activities associated with LNG systems and infrastructure.

Surface & Subsurface Pipeline Infrastructure, UK – Welder, Engineer, SME & Technical Authority

Experience across aviation fuel, gas, hydrogen, and industrial pipeline systems involving construction, fabrication, welding engineering, inspection, integrity assessment, and technical governance.

MANUFACTURING & HEAVY INDUSTRY**Manoir Industries – Nuclear & Petrochemical Manufacturing – Group Welding Engineer**

Sole technical authority supporting high-integrity component manufacture, welding procedure qualification, metallurgy, heat treatment, fabrication quality, and manufacturing compliance.

Hi-Tech Fabrication – Nuclear & Petrochemical & Manufacturing – Lead Quality & Technical Welding Engineer

Technical authority responsible for welding engineering, metallurgy, QA/QC, PED, EN 15614, PD 5500, ASME compliance, inspection planning, and manufacturing assurance.

Pressure Vessel & Pressure Retaining Equipment Manufacture – Welding Engineer / Technical Authority

Support for fabrication, inspection, qualification, quality assurance, metallurgy, and compliance activities associated with pressure-retaining systems.

Petrochemical Equipment Manufacture – Welding Engineer / Technical Authority

Support for fabrication quality, metallurgy, welding procedure qualification, technical compliance, and manufacturing assurance.

Pharmaceutical Manufacturing Facilities – Technical Authority

Support for welding engineering, quality assurance, fabrication quality, inspection, technical compliance, and regulatory requirements.

Industrial Fabrication & Manufacturing Facilities – Welder, Engineer & Technical Authority

Support for fabrication quality, welding engineering, inspection, metallurgy, materials assessment, QA/QC systems, and technical assurance across multiple sectors.

Gas Pipeline Construction Projects – Advanced Coded Welder

Construction and installation of large-diameter gas pipeline infrastructure throughout the United Kingdom and Europe, involving multiple welding processes, materials, and code requirements.

Structural Steel Fabrication Projects – Welder, Fabricator, Welding Engineer & Technical Authority

Experience covering structural steel fabrication, welding quality, inspection, standards compliance, construction quality, workmanship assessment, and manufacturing assurance.