

Professor Derek Sheldon

Dip.Tech., PhD., CEng., FIMechE., MRAeS., MAE., MIAEE, MDS.

PROFILE

A **CHARTERED ENGINEER** with 40 plus years' experience of leading edge engineering/product design, materials and manufacturing. Achieved a respected international high profile and significant influence on the engineering design of vehicles/machinery/products, product innovation and strategies achieving world class manufacturing excellence.

Recent Director of the Manufacturing Advisory Service (MAS) and West Midlands Manufacturing Consortium (WMMC). Member of the Academy of Experts.

CAREER

May 2023

**Emeritus Professor Derek Sheldon
Chartered Consultant Engineer**

1995 – 2023 (April)

**Derek Sheldon Consultants Ltd
Chartered Consultant Engineers
Principal Consultant/Managing Director**

The Managing Director/ Principal Consultant in a multi-disciplinary team of 7 Associate Consultants who have carried out strategic studies and formulated engineering solutions for blue chip organisations. Clients include:

AVL List GmbH	London Underground
Britannia Insurance Association	Maersk
BHW	North Sea Production, etc.
Caradon Group	Odebrecht Oil and Gas Services
Christian Salversen Food Industries	PEL Engineering
City Property Management Services	PowerGen
Col-Tec Collating	Rank Organisation
Cosworth Technology	Ralph Coleman International
Credential Environmental Ltd	Ross & Catherall
Crown Resources	Royal Academy of Engineering
Department of Trade & Industry (DTI)	UK Trading Standards
Fiat Auto (UK)	UKM (Germany) GmbH
Hampson Group	Spectus Energy Ltd
Jubilee Industrial Investments	DMG MORI SEIKI (UK) Ltd
Kautex/Textron, Belgium	Agroprodukt Ltd, Kaliningrad
London & North Western Railways	

Principal Achievements

An **Expert Witness** for 35+ years on behalf of several large plc's, on UK and overseas subjects such as automotive vehicle design and manufacture of systems/components, gearbox/transmission systems, automotive industry equipment, manufacturing systems, general electro-mechanical and rotating machinery/systems, noise/vibration problems in process plant, escalators/lifts, patent disputes, process machinery, oil rig systems and platforms etc.

Acted for leading London and Regional Solicitor practices including inter alia:

Baehrs	Gouldens	Putmans
Bolden & Youatt	Hatchers	Shearman Bowen
Blythe Liggins	John D Cort	Shulmans
Buckle Mellow	Kippax Beaumont Lewis	Sherringtons
Charles Russell	Knowles Ltd	Steele Raymond
CMS Cameron McKenna	Lee & Priestley	Stephensons
Cobbetts	London Fire Service	Travers Smith
DLA Leeds	MacFarlanes	Veale Wasbrough
Eversheds	Memery Crystal	Watson Burton
Ford & Warren	Needham & James	Bird & Bird
Glaisyers	Nicholson Graham & Jones	

These expert witness cases were in both civil and criminal proceedings on matters related to litigation, industrial accidents, contractual disputes, patents, health & safety, personal injury, product liability, insurance & loss adjusting. Training and experience as a SJE.

An Innovate (IUK) (formerly Technology Strategy Board (TSB)) Project Monitoring Officer (MO) over a number of years on a number of Advanced Technology Industry/Academia R&D Programmes in Manufacturing, Materials, Transport and Engineering/Product Design.

Continue to be a Lead member of the Judging Team for assessing companies on the Institution of Mechanical Engineers/Manufacturer - Manufacturing Excellence MX Awards 2020 in relation to Innovation and Design.

Until fairly recently Chairman of the MAS-WM New Product Development Gateway Panel (i.e. West Midlands Dragon's Den) for assessing over 120 SME's requiring substantial funding on innovative concepts/ideas/processes through to successful business operations across a diverse automotive, aerospace, medical and civil engineering sectors.

Presently a recognised expert to the IMechE and UK Government related to the present and future "state of the art" on automotive vehicle engineering/manufacturing systems and fuel technologies.

Specialist Technical Advisor for many years to various organisations, both small and large on major problem solving issues related to both engineering design, innovation, product development and manufacturing processes issues - too various to mention individually.

Implemented a New Product Development Management programme to some 60 SME's as part of a DTI/Royal Academy of Engineering Initiative for 650 SME's.

2001 – date

Anglia Ruskin University, Cambridge & Chelmsford

Emeritus Professor in Design and Engineering

1998 – 2001

Ford Professor in Automotive Systems

Principal achievements

- Principal Research Investigator on a 3 year £587k EPSRC Grant with a 7 person team on an "Integrated User-Centred Design and Manufacturing Process for Tactile Maps using innovative Print Technology (period 2002-2006). EPSRC judged the research as outstanding and internationally leading.
- Joint research programme with Ford Motor Company on specific commercially sensitive automotive engine programmes.
- Primarily responsible for strategic European collaboration with University/Industry related to major research, education and training programmes.
- University Co-ordinator for all National and Regional University for Industry (Ufi) programmes
- Member of the National HEFCE/University for Industry Liaison Committee, Higher Education Representative on both the Essex and Cambridgeshire Regional Learning Hubs
- Coordinator for the Ford Professors Forum of some 6 FMC Professors across the United Kingdom and USA.

1996 – 1998

T & N Technology Limited (Now Federal Mogul Technology Ltd)
Director of Manufacturing

A world-wide mechanical engineering, materials and manufacturing technology R&D centre of T&N plc, an international automotive component group with a turnover of some £2 billion. Responsible for all aspects of the manufacturing division and a major business turnaround of T&N Technology. Responsible for £6 million budget and 95 staff across T &N T Design & Manufacturing operations.

Principal Achievements

- Major involvement in setting up manufacturing business re-engineering strategies of T&N Product Groups throughout the world – e.g. lean manufacturing, new product introduction, management restructuring, continuous improvement programmes (Kaizen), cellular manufacture.
- Reviewed existing specialist machinery business and transformed the equipment to the T&N groups from a £0M to a £4.5M turnover business.
- Revitalised a special purpose machine tool/system design development and manufacturing capability for the World Wide T&N Group of companies
- Devised and agreed a new divisional 5 year strategic plan for T&N Technology.
- Reorganised the division, involving formation of accountable and focused teams.
- Established new R&D programmes equivalent to £3.5m business.
- Instituted Health and Safety procedures in the design and manufacturing departments.
- Set up company procedures for ISO9001 accreditation leading to a full ISO approval..

1988 – 1995

Coventry University

Dean of Engineering and Lucas Professor of Manufacturing Systems

(formerly Head of Mechanical and Production Engineering)

Annual Budget £7m. Research grants in excess of £6.5m. 3200 undergraduates. 300 postgraduates. Over 300 academic staff. Responsible for 6 divisions, mechanical, manufacturing, engineering/product design, management systems, electronics and communications.

Principal Achievements

- Established the largest faculty of Engineering in the UK, adopting a business-like approach.
- Sourced major business covering design, rapid prototyping, manufacturing processes, technology transfer and process re-engineering resulting in major profit improvements in leading UK industries.
- One of eight Lucas Industries Professors of Engineering researching in Auto/Aero Engineering specifically on Design & Development matters.
- Developed some 4 innovative research centres in conjunction with industry.
- Established a highly successful Engineering Design Research Centre in collaboration with EPSRC and Industry.
- Gained the highest quality standards for teaching and research granted by National Government Bodies.
- Major influence and co-ordinator for the establishment of a 65000m² science and technology park at Coventry University in conjunction with industry.
- Considerable input to the design and development of the chassis and suspension systems for Richard Noble's Thrust SSC Land Speed Vehicle.
- Established a £0.5m industry show-piece CAD/CAM Unigraphics training centre.
- Negotiated at government level in Israel, Thailand, Iran, Singapore, Malaysia, to set up Coventry University Engineering Education/Training initiatives.

1986 – 1995
Tri-Plan Ltd, Guildford
Technical Director

Responsible for a team of Consultant Engineers working on highly classified Ministry of Defence and Petro-Chemical engineering specialist programmes.

These included project management, equipment/machinery design and development, plus independent Risk Analysis, FMEA and Hazard assessments/evaluations of system designs.

1986 – 1988
C J Williams Ltd, Aldershot
Technical Director

Automotive Design and Development - £8.5m pa. Responsible for 30 professional staff and high-tech design programmes in excess of £5.5m for specialist military vehicle programmes. Most of these were wheeled HGV and tracked vehicle programmes were of an advanced nature and highly classified.

1980 – 1986
Huddersfield University
Head of Mechanical and Production Engineering

Headhunted and appointed from industry to revive an ailing department.

Principal Achievements

- Set up joint industrial/DTI/Academic centres in CAE and Product Development.
- Five teaching company schemes successfully set up with David Brown Gear Industries, Holset Turbochargers, Hawker Siddeley, etc.
- Devised and implemented an innovative CAD/CAM 'club' for use by leading edge technology manufacturers in the industrial region.

1977 – 1980
Defence Research Agency (RARDE)
Project Manager

Responsible for all the project management as well as the design authority of a £19m drive line/transmission system development involving Vickers Defence Systems, Rolls Royce, David Brown Industries and others for the Challenger Main Battle Tank, presently in service with the British Armed Services and other overseas nations. This also included the gearbox design, plus the development and commissioning of numerous advanced test rigs, procurement of machine tools and full scale vehicle trial development programmes.

Responsible for specific design matters on wheeled HGV and armoured vehicles.

EARLY CAREER

1975 - 1980 Principal Scientific Officer, RARDE
1969 - 1975 Principal and Senior Lecturer, Cranfield Institute of Technology
1967 - 1969 Lecturer in Mechanical Engineering, Coventry University
1956 - 1964 Engineering Apprentice / Design Draughtsman, Wellman Cranes

OTHER INFORMATION

- Written and presented some 91 papers on design and manufacture;
- Excellent links with overseas research and development organisations;
- Member of the DTI/TSB Technologies Programme Advisory & Mentor Panels, 2002-2009;
- Member of the EPSRC Peer Review College (2003-2005 inclusive);
- Advisory Board Member of the International Design Society 2000-2007;
- Member of the Manufacturing Industries Divisional Board, IMechE, 1995 – present;
- Member of the IMechE Strategy Committee – present time
- Chairman of Manufacturing Industries Divisional Board, IMechE, 1995 – 1997;
- Member of Council, Institution of Mechanical Engineers (IMechE) 1993 – 1997;
- Member of the IMechE Manufacturing Excellence Awards Executive Board 1995-2013;
- Regular presenter of keynote addresses to Industry and Academia;
- Founding Editor of an International Editorial Board for the “International Journal of Engineering Design” for the past 25 years – Publishers Taylor & Francis;
- Member of CCC & EGC 1 Executive Committees - Engineering Council, 1995 – 1998;
- Supervised some 31 MPhil/MSc/PhD Engineering/Design/Manufacturing postgraduates;
- External Examiner of some 32 MPhil/ PhD/MSc postgraduates;

EDUCATION AND QUALIFICATIONS

Emeritus Professor of Engineering

CEng – Chartered Engineer

FIMechE – Fellow of the Institution of Mechanical Engineers

MRAeS – Member of the Royal Aeronautical Society

MAE – Member of the Academy of Experts

MDS – Member of the Design Society

MIAEE – Member of the International Association of Elevator Engineers

Bristol University

PhD – Aeronautical Engineering

University of Wolverhampton

Dip. Tech (Eng) Hons (1st Class) Mechanical Engineering

PERSONAL

- Retired Director of Music (after 15 years) - Knowle Parish Church, Solihull - 50 strong choir, 16 strong orchestra.
- Retired Director of Music/Conductor- 30 strong Knowle Male Voice Choir
- Church Organist and Pianist at occasional concerts.
- Presently Organist and Keyboard player at Malvern Chase Church.
- Recent Chairman of School Governors – Lyndon Comprehensive Trust School, Solihull with 1330 students & 140 staff.
- Presently Governor (Vice Chairman) at the Chase Academy, Malvern with 1400 students.
- Past Chairman of Solihull Schools Forum for 4 years

Married, with Wife, 2 married daughters and 5 grandchildren (plus 2 foster children)

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