

Current Position: Associate of Air Quality Consultants Ltd.

Year of Birth: 1949

Nationality: British

Qualifications: BSc Environmental Sciences (1971)
MSc Environmental Sciences (1975)
PhD Air Pollution Chemistry (1978)

Positions Held:

- Ø Member of National Society for Clean Air (NSCA) Technical Committee (1988-97), Air Quality Committee (1995-2003) and Council (1993-2003). Co-ordinator of National Society for Clean Air Local Air Quality Management Initiative (1993-95)
- Ø Member of Environmental Issues Committee for PTRC Transport and Planning Summer Annual Meetings (1990-96)
- Ø Member then Deputy Chair of Confederation of British Industry Wessex Environmental Committee (1991-93)
- Ø Member of UK Government's Photochemical Oxidants Review Group (1985-94)
- Ø Member of UK Government's Quality of Urban Air Review Group (1992-97)
- Ø Member of EC Working Group on Airborne Particles (1995-2004)
- Ø Member of EC Clean Air for Europe Steering Group (1995-2008)
- Ø Member of EC Working Group on Ozone (1997-99)
- Ø Member of Air Quality Management Resource Centre Steering Committee, University of West of England (1998-2003)
- Ø Member of EC Working Group on Guidance (1999-2000)
- Ø Member of EC Working Group on Implementation (2002-2004)
- Ø Visiting Professor in Air Quality Management and Assessment, University of the West of England (2002-current)
- Ø Member of CEN Technical Committee 264 Working Group 15 on PM_{2.5} Measurement Methods (2003-2004)
- Ø Invited Expert for WHO workshops Systematic Review of Health Aspects of Air Quality in Europe (2003-2004)
- Ø Chair of DfT's Monitoring Panel supporting work on Model Development for Heathrow Airport (2004-2006)
- Ø Member of UK Government's Air Quality Expert Group (2002-2012)
- Ø Member of UK Government's Committee on the Medical Effects of Air Pollutants (2003-2013)
- Ø Member of review panel for NERC/MRC funded Environmental Exposures and Health Initiative (2010)
- Ø Fellow of the Institute of Air Quality Management (2011)
- Ø Member of UK Expert Delegation invited to China to discuss PM_{2.5} (2013)
- Ø Member of UK Expert Delegation invited to China to discuss air quality management (2015)
- Ø Member of UK Government's Air Quality Modelling Steering Group (2013-2015)
- Ø Member of review panel for NERC Atmospheric Pollution and Human Health in a Chinese Megacity (2015)
- Ø Member of review panel for NERC Atmospheric Pollution and Human Health in an Indian Megacity (2016)

Key Experience:

Over forty years' experience in environmental sciences, mostly in air quality. Contributed to development of air quality management in the UK, Europe, Australia and South Africa. Involved in major studies of air quality, covering nitrogen dioxide, lead, dust, acid rain, PM₁₀, PM_{2.5} and ozone. Responsible for setting up UK enhanced urban air quality monitoring network. Responsible for appraisals of all local authorities' air quality Review & Assessment reports for 10 years. Carried out air quality assessments for power stations; road schemes; ports; airports; railways; mineral and landfill sites; and residential/commercial developments. Involved in numerous investigations into industrial emissions; ambient air quality; indoor air quality; odours; nuisance dust and transport emissions. Prepared specialist reviews on air quality topics, including Exposure-Reduction approach for PM_{2.5} control and a report on PM_{2.5} in the UK. Expert witness at numerous Public Inquiries. Published over 70 scientific papers and given numerous presentations at conferences.

Employment Record:

2017-2018	Director, Air Quality Consultants Ltd.
1993-2017	Managing Director, Air Quality Consultants Ltd. Established new company
1983-1993	TBV Science (now Bureau Veritas), Assistant Director with responsibility for environmental consultancy. Previously Manager of Air Quality Department
1983-1989	Research Consultant, Edinburgh University Adviser to Edinburgh Lead Study.
1980-1983	Research Fellow, Edinburgh University Principal Investigator for study of trace metal behaviour in freshwaters
1978-1980	Research Associate, Lancaster University Responsible for study of heavy metal chemistry in polluted waters.
1973-1974	Research Assistant, Lancaster University Study of hydrology of upland catchments.

Air Quality Management and Policy

Clean Air Zone for Bristol (2017-2018)

Contributing to development of a Clean Air Zone for Bristol as part of Defra funded grant. Includes supporting the air quality modelling and calculation of health impacts of options being considered.

Nitrogen Impacts on Ashdown Forest Ecosystems (2014-2018)

Project Director for on-going programme to monitor nitrogen inputs to Ashdown Forest, to link to ecological condition surveys being carried out by ECUS. Project commissioned by Wealden District Council and led by ECUS. Monitoring and modelling covers nitrogen dioxide, ammonia and nitrogen deposition.

Air Quality Modelling for Policy Development (2013-2015)

Member of Defra's Air Quality Modelling Steering Group providing advice on various aspects of modelling for policy development.

Management of Air Quality in UK and Europe (2013 & 2015)

Invited member of two separate delegations to China to present and discuss UK and EU experience of assessing and managing air quality, with a focus on PM_{2.5}. Visits arranged by the UK Royal Society of Engineering and the Chinese Academy of Engineering, with support from the British Embassy.

Health Impacts of Air Pollution in Bristol (2014)

Responsible for project to quantify mortality and morbidity attributable to air pollution within the City of Bristol. Calculations based on risk coefficients applied to mapped PM_{2.5} concentrations across the city.

Options for Exposure Reduction Approach for PM_{2.5} in Australia (2012)

Contributed to a project for the NSW Office of Environment & Heritage (OEH), to investigate options for an exposure-reduction approach for PM_{2.5} in Australia. The project included a review of international practices and experience, and a summary of Australian conditions. A number of options were reviewed in detail, including compliance mechanisms and implementation costs and timescales, with recommendations for a phased introduction provided.

Review of Low Emissions Toolkit (2012)

Contributed to the review of the Low Emission Toolkit, which has been developed to help design and evaluate low emission strategies to minimise emissions from traffic sources. Recommended improvements to the toolkit and supporting documentation. Carried out on behalf of the local authorities' Low Emission Strategies Partnership.

Review of PM_{2.5} in Scotland (2012)

Managed the preparation of a review of PM_{2.5} in the Scotland on behalf of the Scottish Environment Protection Agency (SEPA). The project focussed on the role of industrial sources controlled by SEPA, and the contribution the Agency could make to reducing exposure to PM_{2.5}.

Review of Air Quality Modelling Requirements for UK (2010-2011)

Member of Steering Group appointed by Defra to review requirements for models to support policy development in the UK. Covered local and regional models for ambient concentrations and deposition.

Review of PM_{2.5} in the UK (2010)

Managed the preparation of a comprehensive review of PM_{2.5} in the UK, covering health effects, sources, speciation, pathways, regulatory requirements, monitoring and modelling. Carried out on behalf of SNIFFER and funded by the Scottish Environment Protection Agency, the Northern Ireland Environment Agency and the Environment Agency.

Review of Defra Communications (2010)

Contributed to a project led by Aether to review Defra's air quality communications. This included a detailed review of the functionalities of the Air Quality Archive, a review of compliance with obligations defined in the relevant Directives, and stakeholder questionnaires and interviews. The report culminated in a series of recommendations for the future development of communications to both the scientific community and members of the public

Development of Control Strategies for PM₁₀ and NO₂ Hotspots in London (2009-2010)

Contributed to a TfL contract to develop local control measures for London hotspots. The study was used to inform the review of the Mayor's Air Quality Strategy

Assessment of Local Authority Review & Assessment Procedure (1999-2010)

Responsible for Defra and Devolved Administrations contracts to appraise all Air Quality Review & Assessment reports prepared by local authorities in UK. Included operation of a help desk to provide assistance on review and assessment, as well as updating of Review & Assessment Guidance and preparation of Progress Report Guidance. Performed in co-operation with University of West of England.

LA Support Helpdesk (2005–2010)

Contributed to the operation of the LA Support Helpdesk on behalf of Defra and the Devolved Administrations. Contract was led by AEA, together with Bureau Veritas. Inputs included development of FAQs, development of nitrogen dioxide tubes methodology, and updates of LAQM Technical Guidance.

Development of Control Strategies for PM₁₀ Hotspots in London (2009-2010)

Responsible for TfL contract to develop control measures for London hotspots. Work forms part of the review of the London Mayor's Air Quality Strategy.

Development of Air Quality Criteria for the Evaluation of Air Quality Management Plans in South Africa (2007)

Contributed to the development of evaluation criteria for Air Quality Management Plans in South Africa on behalf of the Department for Environment and Tourism (DEAT). Criteria developed were applied to four AQMPs.

Air Quality Assessment of Transport Management Measures for West Midlands (2006)

Responsible for air quality assessment of options to manage congestion in West Midlands as part of Transport Innovation Fund project.

Exposure-Reduction Approach to Air Quality Management in UK and EU (2004-2006)

Developed options for a new exposure-reduction approach to air quality management in the UK and the EU for non-threshold pollutants, in particular for PM. Carried out on behalf of Defra. The approach has now been adopted by the UK Government and the European Commission.

Review of Non-Automatic Monitoring Network (2005)

Invited contributor to review of the network.

Scoping Study for Strategic Environmental Assessment, Yorkshire & Humber Region (2004)

Scoping study for collation of baseline air quality data to help inform Strategic Environmental Assessment work within the Yorkshire and the Humber Region. Included stakeholder workshop. Project carried out in co-operation with Casella Stanger.

Update of Design Manual for Roads and Bridges (2002-2003)

Contributed to the updating of the DMRB screening model on behalf of the Highways Agency.

Update of Review and Assessment Guidance (2002)

Responsible for Defra and Devolved Administrations contract to update the technical guidance to help Local Authorities carry out the next round of Review and Assessment. Carried out in co-operation with the University of the West of England and Casella Stanger.

Evaluation of First Phase of Review & Assessment Process (2001-2002)

Responsible for Defra and Devolved Administrations contract to evaluate the Review & Assessment process and make recommendations for the second round. Carried out in co-operation with University of West of England.

Review and Assessment, Reigate & Banstead BC (2000-2001)

Responsible for preparation of Stage 3 review and assessment. Relied on modelling of road traffic impacts carried out by Casella Stanger. Considered monitoring data and impact of Gatwick Airport.

Guidance for Multi-Modal Environmental Assessment (1999)

Air Quality Advisor for development by Halcrow Fox of strategic technical guidance for the MMEA Guidance Manual, on behalf of the Highways Agency.

Review & Assessment for PM₁₀ (1999)

Preparation jointly with Stanger Science & Environment and AEA Technology of technical assistance document to help local authorities with review and assessment for PM₁₀ against the proposed EU Limit Values, on behalf of DETR.

Review of UK Non-Automatic Monitoring Networks (1997-1998)

Responsible for carrying out a review of the UK nitrogen dioxide diffusion tube; sulphur dioxide and smoke; lead; and trace element surveys, on behalf of the Department of Environment, Transport and the Regions.

Strategic Air Quality Assessment of Trunk Road Network in Scotland (1998)

Preparation of brief for the development of an assessment tool for Strategic Air Quality Assessment of the Trunk Road Network in Scotland, on behalf of the Scottish Office Development Department.

Consultation Report for Local Environment Agency Plan, New Forest Area (1997)

Preparation of air quality section of LEAP Consultation Report. Included review of existing air quality and identification of issues for Environment Agency.

Review of Protocol for Assessment of Air Pollution Episodes (1997)

Review of implementation by the Environment Agency of the protocol for assessment of air pollution episodes, and recommendations for refinement.

Protocol for Assessment of Air Pollution Episodes (1995-1996)

Preparation of a Manual to assist HMIP Inspectors assess the contribution of Part A processes to individual air pollution episodes. Provides a Review of Episodes and a Protocol for assessment of episodes.

Air Quality Management Plan for Dublin (1995-1998)

Member of project team to develop an air quality management plan for the city of Dublin, Ireland.

Draft Directive on Ambient Air Quality Assessment and Management (1994-1995)

Expert advisor to sub-committee of the European Union's Economic and Social Committee in their deliberations on the draft Directive.

Setting Ambient Air Quality Standards for Europe (1995)

Invited contributor to European Commission Workshop on the setting of new air quality standards for the European Union.

Requirements for Local Air Quality Management in the UK (1994)

Responsible for a study of the measures required to implement local air quality management in the UK, on behalf of the National Society for Clean Air, with financial support from the Department of the Environment.

Requirement for a Split HC/NOx Motor Vehicle Emission Standard in Europe (1994)

Responsible for a review of the environmental basis for splitting the joint HC/NOx vehicle emission standard in a forthcoming EU Directive, on behalf of the International Platinum Association.

Road Traffic

Silvertown Tunnel in East London (2015-2017)

Providing independent peer review of air quality assessment work for the Silvertown Tunnel under the river Thames, on behalf of Transport for London and contributing expert evidence at Development Consent Order Hearings.

M4 Smart Motorway, Hillingdon (2015-2016)

Provided support to the London Borough of Hillingdon for the Development Consent Order, including providing expert input at the Development Consent Order Hearings.

Air Quality and Climate Change, Northern Distributor Route, Norwich (2013-2014)

Provided support to Mott MacDonald team preparing air quality and climate change chapters for environmental statement for proposed new road around the north of Norwich. The scheme was a National Infrastructure project, and support was provided for the Development Consent Order Hearings.

Options to Reduce Localised Air Quality Impacts (2012-2014)

Contributed to project examining the use of microsimulation road traffic models combined with dispersion modelling to investigate options to reduce localised effects of road traffic within an Air Quality Management Area. Evaluated effects of imposing a 20 mph speed limit and of changes to traffic signalling. Project supported by Defra grant funding.

Revised DMRB Air Quality Model (2010-2014)

Contributed to the development of a fully-revised Design Manual for Roads and Bridges Air Quality model on behalf of the Highways Agency.

Expert Witness Dalry Bypass, North Ayrshire (2008-2014)

Oversaw the air quality assessment for the Dalry bypass on behalf of Transport Scotland. Included presentation of expert evidence at the Public Inquiry.

Expert Witness, Postwick Junction, Norwich (2012-2013)

Responsible for climate change assessment of new road junction with the A47. Findings set out in proof of evidence presented at the Public Inquiry. Also addressed questions at the Inquiry relating to the air quality assessment carried out by Mott MacDonald.

Proposed New Road, Doha, Qatar (2012)

Oversaw the completion of an air quality assessment for a proposed new road in Doha, Qatar. Modelling required the use of the AERMOD dispersion model.

Bus Rapid Transit Scheme in Southern England (2009-2012)

Contributed to the air quality and greenhouse gas assessment for a Bus Rapid Transit scheme in a major city in Southern England. Project involved detailed dispersion modelling and preparation of the air quality chapter for the Environmental Statement.

Air Quality Advice to the Scottish Government's National Roads Directorate (1996-2010)

Part of a team of consultants carrying out reviews and audits of Environmental Assessments and Stage Reports for Trunk Roads in Scotland. The aim was to advise on legal and procedural compliance and to raise the standard of road assessment through review and constructive comment.

Expert Witness, Aberdeen Western Peripheral Route, Scotland (2005-2009)

Responsible for air quality assessment of new road around Aberdeen. Assessment involved detailed modelling using AAQuIRE. Prepared Chapter for Environmental Statement. Prepared evidence for presentation at Public Inquiry.

Expert Witness, M8, M73, M74 Network Improvements, Scotland (2003-2009)

Responsible for air quality assessment of proposed improvements to the M8, M73, M74 network. Assessment involved detailed modelling using AAQuIRE. Prepared Chapter for Environmental Statement. Prepared evidence for presentation at Public Inquiry.

Expert Witness, M8 Baillieston to Newhouse, Scotland (2003-2008)

Responsible for air quality assessment of proposed M8 link between Baillieston and Newhouse. Assessment involved detailed modelling using AAQuIRE. Prepared Chapter for Environmental Statement. Prepared evidence for presentation at Public Inquiry.

Expert Witness, A628 Mottram-Tintwistle Bypass, Pennines (2007-2008)

Responsible for advising Natural England on air quality impacts on the South Pennine Moors Special Area of Conservation. Prepared evidence for presentation at Public Inquiry.

Expert Witness, Weymouth Relief Road, Southern England (2001-2008)

Responsible for air quality assessment of proposed Weymouth Relief Road. Involved use of AAQuIRE model to predict local impacts, and WebTAG methodology for climate change emissions. Assessed impact on people and ecologically sensitive areas. Prepared evidence for presentation at Public Inquiry on behalf of Dorset County Council. Providing support on monitoring.

Expert Witness, Blunsdon Bypass, Swindon (2004-2005)

Contributed to air quality assessment of proposed A419 trunk road upgrade. Assessment involved use of DMRB and webTAG methods. Prepared Chapter for Environmental Statement. Prepared evidence for presentation at Public Inquiry.

Expert Witness, A80 upgrade, Scotland (2003-2005)

Contributed to air quality assessment of proposed A80 trunk road upgrade. Assessment involved detailed modelling using AAQuIRE. Prepared Chapter for Environmental Statement. Prepared evidence for presentation at Public Inquiry.

Expert Witness, Kincardine Bridge (2004)

Responsible for preparation and presentation of expert evidence at Public Inquiry.

Air Quality Assessment of Link Road, Southern England (2002)

Responsible for air quality assessment of proposed Chickrell Link Road, Weymouth. Used DMRB methodology to predict local road traffic impacts. Assessed construction impacts and proposed mitigation.

Conferences on Transport and Air Quality (1995-2004)

Designed and chaired a series of conferences dealing with transportation measures to improve air quality. Conferences run by PTRC and aimed at planners, highway engineers and environmental health officers.

Audit of Air Quality Model for Trunk Roads in Scotland (2000)

Responsible for air quality audit of the ENEVAL modelling package prepared by MVA for the Scottish Executive Development Department, to help with the strategic environmental assessment of trunk road schemes in Scotland.

Expert Witness, Carmarthen Eastern Bypass, Wales (1996)

Preparation of Proof of Evidence on behalf of the Welsh Office, dealing with air quality, for the Public Inquiry into the Carmarthen Eastern Bypass.

Expert Witness, Weymouth Relief Road, Southern England (1995)

Preparation of Proof of Evidence on behalf of Dorset County Council, dealing with air quality, for the Public Inquiry into the A354 relief road at Weymouth.

Expert Witness, Shoreham Port Development, Southern England (1995-1997)

Preparation of Proof of Evidence dealing with air quality implications of traffic from Shoreham Port, on behalf of Hove Borough Council.

A509 Olney Bypass, Central England (1995)

Responsible for preparation of air quality assessment of two bypass options, on behalf of local Highways Authority.

Expert Witness, A5225 Wigan Bypass, N England (1994-1995)

Responsible for preparation and presentation of evidence at a public inquiry, on air quality impact of the proposed new road, on behalf of Highways Agency.

Walsall Ring Road, Midlands, England (1994)

Responsible for assessment of the air quality implications of the proposed local authority upgrading scheme for the inner urban ring road.

New Motorway, West Midlands, England (1994-1995)

Specialist advisor on air quality aspects of a new motorway scheme, in preparation for formal environmental statement and presentation of evidence at public inquiry, on behalf of Highways Agency.

Motorway Widening, SE England (1994)

Responsible for preparation of air quality assessment of motorway widening scheme for formal environmental statement, on behalf of Highways Agency.

Motorway Widening, UK (1994)

Responsible for internal quality assurance reviews of air quality assessments for motorway widening schemes, on behalf of environmental consultancy.

Highway Schemes, Dorset, UK (1993)

Project Manager for air quality assessments of two highway schemes and preparation of contributions to respective formal Environmental Statements.

Expert Witness, Trunk Road Scheme, West Midlands (1992-1993)

Responsible for preparation and presentation of evidence on air quality impact of a major trunk road scheme on behalf of Department of Transport.

Expert Witness, Traffic Impact, London (1990)

Preparation and presentation of evidence on air pollution issues of major road scheme on behalf of Hounslow B.C.

Expert Witness, Traffic Impact, UK (1988-1989)

Responsible for preparing and presenting evidence on noise and air pollution impact of traffic related to a proposed port development at Shoreham, Sussex.

Expert Witness, Traffic Impact, London (1989)

Responsible for assessment of air quality impact of traffic related to a proposed business park development in London and presentation to a Public Inquiry.

Traffic Pollution, London (1984)

Involved in submission of evidence on certain traffic related pollutants to Sub-Committee G (Environment) of the House of Lords European Communities Committee.

Monitoring Air Quality

Advisor to Ince Park Community Forum on Monitoring Around a Resource Recovery Park (2012-2013)

Appointed by the Community Forum to advise on monitoring around Ince Resource Recovery Park, which was to include an energy from waste plant and a biomass energy plant.

NO_x and NO₂ Monitoring around Gas-Fired Power Station, North of England (2008-2010)

Established network of four automatic monitors and 21 diffusion tube sites around power station. Used OpenAir software package to interpret findings.

Audit of West London Monitoring Network (2009)

Contributed to review and audit of automatic monitoring across seven London boroughs. Included advice on future monitoring priorities.

Review of Air Quality Monitoring in London (2002-2003)

Responsible for review of air quality monitoring in London, including a stakeholder seminar. Prepared recommendations for creation of a London Air Quality Information Archive. Carried out in co-operation with Casella Stanger.

Assessment of Air Quality Data, Central England (1999-2000)

Responsible for preparation of report analysing results of monitoring for NO₂, PM₁₀, SO₂ and CO, at three locations, as a contribution to a Local Authority's Stage 2 Review and Assessment.

Monitoring for LAQM Review & Assessment, North Yorkshire (1999)

Responsible for carrying out a 3 month monitoring programme for PM₁₀, carbon monoxide and nitrogen dioxide, and preparation of a report on the findings in relation to the requirements of the local air quality Review & Assessment being carried out by Richmondshire DC.

Report on Air Quality Monitoring, Southern England (1997 & 1998)

Responsible for preparation of report setting out results of monitoring for NO₂, PM₁₀, SO₂, CO and O₃, in three towns on behalf of a Local Authority. Particular attention paid to the new National Air Quality Strategy standards and objectives.

Assessments of Air Quality Data, London (1996 & 1997)

Responsible for preparation of report for a Local Authority, presenting and assessing the findings of a monitoring programme carried out for 24 air pollutants at six locations.

Air Quality Monitoring Strategy, Southern England (1996)

Responsible for advising a local authority on an appropriate air quality monitoring strategy to help meet the requirements of local air quality management.

Review of Air Pollution Around Major UK Power Stations (1994-1996)

Responsible for preparing a publication summarising the gaseous air quality impacts of major UK power stations, on behalf of National Power and PowerGen.

QA/QC for Ozone Monitoring Station, SW England (1995)

Responsible for site selection and independent quality assurance and quality control for a local authority operated ozone monitoring station.

UK National Air Quality Data Archive (1995)

Collaborator with Hunting Engineering on feasibility study for Department of the Environment to create an archive of national air quality data. Focus was on requirements of data users.

Impact of Incinerator Emissions on Ambient Air Quality, London (1995)

Responsible for preparation of a report for a Local Authority, assessing findings of a survey carried out using an OPSIS analyser for five air pollutants downwind of an incinerator.

Assessments of Air Quality Data, UK (1995)

Responsible for preparation of reports for two Local Authorities, assessing the findings of surveys carried out using the OPSIS analyser for five air pollutants.

UK Urban Air Quality Monitoring Network (1995-1998)

Expert advisor to TBV Science on their Department of the Environment contract to manage and expand the UK's urban air quality monitoring network.

Air Quality Monitoring Strategy, SW England (1994)

Responsible for advice to local authority on air quality monitoring strategy. Identification of priority pollutants and selection of monitoring sites.

UK Urban Air Quality Monitoring Network (1991-1993)

Project Director for Department of the Environment contract to set up and manage the operation of a new network of air quality monitoring stations, initially in twelve UK cities.

UK Rural Air Quality Monitoring Network (1991-1993)

Project Director responsible for operation of the UK national network of 15 rural monitoring stations for the Department of the Environment.

Mexico City Air Quality Project, Mexico (1991)

Invited to experts' workshop as part of Mexican Institute of Petroleum and Los Alamos National Laboratory study of air pollution problems/solutions for Mexico City.

The London Ozone Study (1983-1987)

Involved in investigation into the effects of London's emissions on downwind ozone concentrations, carried out jointly with the Central Electricity Generating Board and the National Physical Laboratory, and funded by the Commission for European Communities.

Nitrogen Dioxide Across London (1984-1985)

Involved in survey of the distribution of background nitrogen dioxide levels across London using diffusion tubes, with the London Boroughs and Harwell Laboratory.

Acid Rainfall in London (1985-1987)

Project Manager for study of acid rainfall using a wet-only sampler in a central London location.

On-going Nitrogen Dioxide Survey, London (1986-1990)

Project Director for survey of nitrogen dioxide levels across London at locations where high concentrations might be expected. Carried out in co-operation with London Boroughs.

Trends in Lead Levels, London (1984-1990)

Project Director for a study of changes in lead levels in air and dusts following the reduction of lead in petrol, a study co-ordinated with the Department of the Environment's survey of blood lead-levels.

Review of 'Acid Rain and London' (1983-1985)

Responsible for a report on the implications of acid rain for London and the contribution of London's emissions to the general acid rain problem.

Airports

London City Airport Development Programme (2015)

Responsible for reviewing AQC's update of the air quality assessment for the eastern extension of the airport.

London's New Runway (2014-2015)

Contributed to Air Quality Local Assessment for new runway capacity Heathrow/Gatwick Airports on behalf of the Airports Commission, including responsibility for final review of report.

Expert Witness for Ending of Cranford Agreement at Heathrow Airport (2015)

Commissioned by the London Borough of Hillingdon to prepare evidence to present at the Public Inquiry into the appeal by Heathrow Airport Ltd for refusal of permission for the works at the airport to support the ending of the Cranford Agreement (which precludes easterly take-offs on the northern runway). Prepared proof of evidence and attended hearings session at the Inquiry, where the need for mitigation was set out.

London City Airport – Monitoring Programme (2008-on going)

Contribution to the on-going air quality monitoring programme at sites around the airport. Involves operation of two automatic sites and 17 nitrogen dioxide diffusion tube sites, the associated data ratification and the preparation of regular reports.

Ashford International Airport, Lydd, Air Quality Support to Public Inquiry (2010-2011)

Responsible for providing support to the air quality consultant for the project in preparation for the public inquiry, including an audit of the air quality assessment work. The focus was on nitrogen input to the nearby SAC.

Belfast City Airport, Review of Air Quality Assessment (2010)

Responsible for a review of the air quality assessment accompanying runway extension proposal.

London City Airport – Assessment of Individual Aircraft Operations (2010)

Responsible for a study to assess the contribution of individual aircraft movements to NO_x concentrations. The study was based on previous work carried out at Heathrow and correlated individual aircraft take-off movements with short-term NO_x concentrations measured at a downwind site.

Review of Consultation Document for Adding capacity at Heathrow Airport (2007-2008)

Responsible for providing a critical review of the DfT Consultation Document, and all appropriate supporting technical information, in respect of air quality issues. The study was coordinated by the London Boroughs of Hounslow and Hillingdon on behalf of the “2M” group of local authorities.

Analysis of Fast Response NO_x Data, Heathrow Airport (2007)

Responsible for Defra contract to analyse 10-second NO_x data in relation to nearby aircraft departures. Work carried out in collaboration with the Institute for Transport Studies, University of Leeds. Led to a paper published in Atmospheric Environment.

Expert Witness, Coventry Airport New Passenger Terminal (2005-2006)

Responsible for air quality assessment of New Passenger Terminal at Coventry Airport, including modelling of impacts of aircraft and traffic emissions using AAQURE model. Evidence prepared for Public Inquiry.

Project for Sustainable Development of Heathrow (2004-2006)

Chaired Monitoring Panel and a member of the Modelling Panel for the DfT sustainable development of Heathrow project to develop a suitable methodology to assess the development of Heathrow airport.

Expert Witness, Coventry Airport Interim Passenger Facility (2004-2005)

Responsible for air quality assessment of Interim Passenger Facility at Coventry Airport, including modelling of impacts of aircraft and traffic emissions using AAQURE model. Evidence prepared for Public Inquiry.

Air Quality Assessment of Teeside Airport Expansion (2004-2005)

Responsible for air quality assessment of proposed expansion of Teeside Airport. Included modelling of impacts of aircraft and traffic emissions using AAQURE model.

Local Impact of Airports (2003)

Invited to give oral evidence to the Government’s Select Committee on Transport study of Aviation. Evidence given 30 April 2003.

Appraisal of BAA Heathrow Air Quality Strategy and Action Plan (2002)

Appraisal of the Air Quality Strategy and Action Plan to minimise the impact of emissions due to Heathrow airport, on behalf of the London Borough of Hillingdon.

Review of the Consultation Report on South East Regional Airports Strategy (2002)

Review of the proposal for a third runway at Heathrow airport within the SERAS consultation report.

Expert Witness, Proposed Doncaster Finningley Airport (1999-2002)

Responsible for air quality assessment of proposed new airport, as a contribution to the Environmental Statement. Including modelling of future concentrations due to increased aircraft movements and road traffic. Results assessed in relation to national air quality objectives. Evidence prepared for and presented at Public Inquiry.

Air Quality Assessment, Liverpool Airport (2001)

Responsible for air quality assessment of proposed new terminal and expansion of the airport, as a contribution to the Environmental Statement. Including baseline monitoring and modelling of future concentrations due to increased aircraft movements and road traffic.

Air Quality Assessment of Proposed Airport Related Development, Wales (2001)

Contribution to air quality assessment covering operational and construction impacts associated with proposed development of airport related commercial facilities at Cardiff International Airport. Development did not proceed to completion.

Air Quality Assessment, Liverpool Airport (1998)

Responsible for air quality assessment of proposed new terminal and expansion of the airport, as a contribution to the Environmental Statement. Including modelling of future concentrations due to increased aircraft movements and road traffic. Results assessed in relation to national air quality objectives.

Expert Witness, Air Quality Impact of Terminal 5 Proposal, Heathrow (1996-1998)

Preparation of proof of evidence on the air quality impact of the proposed new terminal, on behalf of the London Boroughs of Hillingdon and Hounslow.

Review of Air Quality Assessment of London City Airport (1998)

Carried out a review of the air quality assessment report submitted to the local planning authority for permission to change aircraft movements and passenger throughput at the airport, on behalf of the London Borough of Newham.

Review of Air Quality Impact of 2nd Runway Proposal, Manchester (1994)

Responsible for reviewing the air quality implications of proposed second runway for Manchester Airport, on behalf of local authority.

Advice on Air Quality Implications of Airport Development, Filton (1993-1994)

Responsible for advising local authority on the air quality implications of development of Filton airport for commercial operations. Including attendance at public meetings.

Heliport Environmental Assessment, UK (1989)

Project Manager for formal assessment of the air quality impact of a proposed heliport.

Assessment of Airport Development, London (1988)

Contributed to assessment of air quality implications of London City Airport, on behalf of local authority.

Heathrow Airport, Hydrocarbon Emissions (1987)

Project Manager for preparation of inventory of hydrocarbon emissions from aircraft at Heathrow airport.

Assessments

Expert Witness, Residential Development in Wealden (2014-2015)

Commissioned by Wealden District Council to prepare evidence to present at the Public Inquiry into the appeal for a residential development. The evidence addressed the ground for refusal relating to the effect on the Ashdown Forest Special Area of Conservation. The scheme was contrary to the Core Strategy Local Plan.

Residential Development in Islington (2014)

Responsible for preparing a screening report for a residential development away from a main road. Included Air Quality Neutral calculations as required by the GLA's supplementary planning guidance.

Residential Development in Salford (2014)

Contributed to the preparations for a Public Inquiry into refusal of planning permission for a residential development. Included responding to objections and providing a summary of the air quality impacts of the scheme, to accompany the Planning evidence.

Health Questions relating to Energy from Waste Plant in King's Lynn (2011)

Responsible for reviewing published papers on health effects of incinerators cited by a local resident, to assist the local authority in responding to the concerns raised.

Expert Witness, Mixed Residential Development in Newmarket (2011)

Responsible for assessment of traffic impacts due to the development on the Air Quality Management Area. Prepared expert witness evidence for Public Inquiry. Negotiated with the principal objector leading to a withdrawal of the objection.

Expert Witness, Mixed Use Development in St Helens (2006-2007)

Responsible for assessment of proposed mixed use development in an industrial area. Report prepared for submission to Planning Authority. Evidence presented at Public Inquiry.

Assessment of Air Quality for Proposed Residential Development, Sandwell (2007)

Responsible for assessment of traffic impact on proposed residential development within an AQMA. Advice on Appeal against refusal of planning on air quality grounds.

Expert Witness, Residential Development in SW England (2005-2007)

Responsible for assessment of odour from agricultural slurry handling in relation to proposed nearby residential development, including advice on mitigation measures. Report prepared for submission to Planning Authority. Evidence prepared for Public Inquiry.

Assessment of Abattoir Odour and Proposed Residential Development, East Midlands (2006)

Responsible for assessment of odour from abattoir on proposed nearby residential development, including mitigation measures. Report prepared for submission to Planning Authority.

Expert Witness, Mixed-Use Development, Crawley (2006)

Responsible for air quality assessment of proposed mixed-use development. Included evaluation of potential impact of existing sources on the development site, including a motorway, a sewage treatment works, a mineral processing plant and Gatwick Airport. Evidence prepared for Public Inquiry.

Expert Witness, Residential Development, Cardiff (2006)

Responsible for air quality assessment of a proposed development affecting a SSSI. Evaluated potential impact on SSSI of fungicide spray that might be used in residential gardens, including comparison with deposition to SSSI from other fungicide uses in the area. Evidence prepared for Public Inquiry.

Expert Witness, Proposed Thames Gateway Bridge, London (2003-2006)

Responsible for air quality assessment of proposed bridge over the Thames in East London. Included consultation with local authorities and GLA, commissioning of detailed modelling study, assessment of monitoring data and preparation of a detailed report for TfL. Evidence prepared for Public Inquiry

Strategic Environmental Assessment for Low Emission Zone, London (2005-2006)

Responsible for air quality component of SEA for the London LEZ on behalf of Transport for London. Utilised modelling carried out by Environmental Research Group at King's College London to assess impacts and prepare assessment report.

Expert Witness, Residential Development in Windsor (2005)

Responsible for preparation and presentation of proof of evidence on air quality implications of proposed residential development near to a busy road. Identified a requirement for the use of a forced ventilation system for some of the residential units.

Air Quality Assessment of Proposed King's Cross Redevelopment, London (2001-2005)

Responsible for air quality assessment of proposed redevelopment of the King's Cross land. Includes contribution to master plan design issues to minimise air quality impacts and assessment of subsequent construction and operational air quality impacts.

Air Quality Assessment of Proposed CENTRO Metro System in West Midlands (2002-2004)

Responsible for air quality assessment of proposed 80 km of new metro system in the West Midlands conurbation, covering construction and operational practices.

Air Quality Assessment of Proposed Commercial Development, Southern England (2002)

Responsible for air quality assessment of proposed commercial premises and pier restoration in Brighton. Covered construction and road traffic impacts.

Air Quality Assessment of Proposed Mixed Use Redevelopment, Birmingham (2002)

Responsible for air quality assessment of proposed mixed use redevelopment at Masshouse in central Birmingham. Used Breeze Roads model to predict traffic impacts. Assessed impact of construction dust, proposing mitigation as appropriate.

Expert Witness, Port Development, Southern England (1997-2002)

Preparation of air quality assessment for the proposed new Dibden Terminal at Southampton Docks. Included a baseline monitoring programme and assessment of shipping, road traffic and rail impacts, as well as associated construction effects. Evidence prepared for and presented at Public Inquiry.

Expert Witness, on Air Quality Implications of Proposed Upgrading of West Coast Mainline (1999-2002)

Responsible for air quality assessment of proposed upgrading work on sections of the West Coast mainline, covering construction and operational impacts. Findings assessed in relation to national air quality objectives and mitigation set out as appropriate. Evidence prepared for and presented to four Public Inquiries.

Air Quality Assessment of Proposed King's Cross Redevelopment, London (2001-2005)

Responsible for air quality assessment of proposed redevelopment of the King's Cross land. Includes contribution to master plan design issues to minimise air quality impacts and assessment of subsequent construction and operational air quality impacts.

Air Quality Assessment of Incinerator Emissions, London (2001)

Preparation of modelling assessment of air quality impacts of incinerator emissions for operator to present to the Environment Agency.

Air Quality Assessment of Proposed Retail Outlet, Southwest England (2001)

Preparation of air quality assessment covering operational and construction impacts associated with a proposed town centre supermarket development.

Expert Witness, Air Quality Implications of Retail Store, Midlands (2001)

Presentation of evidence on the air quality implications of traffic associated with proposed new supermarket development.

Assessment of Emissions from Aircraft Engine Testing, Southern England (2000)

Modelling impact of aircraft engine testing facility on nearby hotel development and advice on need for mitigation measures within the hotel.

Air Quality Assessment of Proposed Development Site, South Wales (1999/2000)

Responsible for preparation of air quality assessment of a new development site, including the clean up of an old tar plant, and the construction and traffic impacts associated with the development.

Air Quality Assessment of Proposed Development Site, Southwest England (1999/2000)

Responsible for preparation of air quality assessment of a proposed housing development. Covered the construction and traffic impacts.

Air Quality Assessment of Proposed Parkway Station, Midlands (1999-2000)

Responsible for air quality assessment of proposed new East Midlands Parkway Station. Includes assessment of construction impacts, locomotive emissions and traffic emissions. Findings assessed in relation to national air quality objectives and mitigation set out as appropriate.

Air Quality Assessment of Proposed Rail Link, Midlands (1999-2000)

Responsible for air quality assessment of proposed new rail link to take freight to a manufacturing plant. Formed part of an Environmental Statement for the project. Results assessed in relation to national air quality objectives.

Air Quality Assessment of Proposed Rail Link to Portbury Docks (1999)

Responsible for air quality assessment of proposed new rail link to take freight to a docks. Formed part of an Environmental Statement for the project. Results assessed in relation to national air quality objectives.

Expert Witness, Air Quality Impact of Housing Development, North Wales (1998-1999)

Carried out assessment of traffic impact of proposed housing development on existing network. Prepared proof of evidence for Public Inquiry.

Air Quality Assessment of Development Site, Central England (1997-1998)

Preparation of air quality assessment for proposed major housing development. Included baseline monitoring programme for nitrogen dioxide, PM₁₀ and dust.

Air Quality Impact of Major Industrial Complex, South Wales (1997-1998)

Preparation of report on implications of emissions from industrial complex for a proposed housing development. Involved review of Authorisations and discussions with operators and regulators.

Expert Witness Proposed Welsh Highland Railway, North Wales (1997-1998)

Air quality assessment of proposed steam railway through Snowdonia National Park. Presentation of expert of evidence at Public Inquiry on behalf of Festiniog Railway Company.

Flood Defence Scheme, Northern Ireland (1996)

Responsible for air quality assessment of proposed flood defence scheme running through a town. The dust implications of the constructions activities were the focus.

Monitoring Impact of Industrial Emissions, S. England (1995-1996)

Design of a monitoring programme to assess impact of emissions from an existing industrial complex, to meet requirements of HMIP Inspector. Monitored and assessed HCl, metals and VOCs.

Expert Witness, Major Retail Development, Newry (1995-1996)

Preparation of proof of evidence on the air quality impact of a proposed retail development in Newry, Northern Ireland, on behalf of MFI.

Environmental Assessment of Port Development, Southampton (1995)

Preparation of report on potential air quality impact of plans to deepen the channel at Southampton harbour.

Assessment of Impact of Aircraft Engine Testing Facility, Bristol (1994)

Assessment of odour and pollutant impact of aircraft engine testing facility on nearby housing using a dispersion model.

Environmental Impact Assessment Guidelines, Abu Dhabi (1991)

Contributed to development of guidelines for Abu Dhabi National Oil Company on carrying out environmental assessments of new projects.

Odour Control for Tobacco Company, Bristol (1990-1991)

Responsible for assessment and advice on controlling of odour impact of tobacco manufacturing plant being relocated to a new site.

Environmental Protection Study, Abu Dhabi (1990)

Contributed to major review of air quality in the Emirate.

King's Cross Redevelopment, London (1989-1990)

Co-ordinated critical review of the Environmental Statement for the proposed King's Cross Railway Lands Redevelopment.

South Denes Power Station Environmental Assessment, UK (1989)

Responsible for the assessment of the air quality impact of a proposed combined cycle, gas-fired gas-turbine.

Review of Incinerator Environmental Statement, UK (1989)

Contributed to a critical review of an Environmental Statement submitted to a local authority for planning permission for an incinerator to burn liquid waste.

Newspaper Printworks Lead Contamination, London (1983-1986)

Project Director for investigations into lead pollution in the vicinity of newspaper printworks in Central London.

Dusts

Revision of Construction Dust Assessment Guidance (2013)

Contributed to the revision of the guidance issued by the Institute for Air Quality Management on the assessment of dust from demolition and construction.

Expert Witness, Dust from Sandstone Quarry, St Helens (2009)

Responsible for preparation of proof of evidence on dust and PM₁₀ impacts arising from revised operations at a sandstone quarry. Included preparation of Dust Action Plan.

Dust from Industrial Operations, Cheshire (2007-2008)

Responsible for providing advice on nuisance dust fallout affecting car showroom. Included analysis of fast response PM monitoring data, in relation to wind direction, analysis of deposit samples by optical microscopy, and analysis of public register documents for two nearby industrial plant.

Dust from Waste Recycling Plant, Kent (2005-2006)

Evaluation of dust assessment and control measures for plant recycling construction waste and preparation of advice to support Local Authority refusal of planning permission.

Landfill Site, London (1996-2005)

Development and implementation of a dust, PM₁₀ and cadmium monitoring programme to meet the requirements of the Local Authority and the Environment Agency for operation of a new landfill site. Preparation of annual reports on dust monitoring.

Dust from a Wood Chipper, West Midlands (2004)

Responsible for assessment of dust from an existing wood chipper in relation to a prosecution for nuisance. Included evaluation of existing control measures.

Expert Witness, Construction Impact of Terminal 5 Proposal, Heathrow (1998-1999)

Preparation of proof of evidence on the air quality impacts associated with the construction of the proposed new terminal, on behalf of the London Borough of Hillingdon. Including drafting of package of control measures and a monitoring programme.

Golf Course Leisure Development, London (1997-1998)

Preparation of air quality assessment of proposed development. Covered dust impact of construction phase and traffic impact during operational phase.

Expert Witness, Dust from a Wood Chipper, Melksham (1996)

Responsible for assessment of dust impact of a proposed wood chipper and recommendations to minimise dust. Presentation of evidence at a Public Inquiry.

Expert Witness, Dust from Waste Transfer Station, London (1996)

Responsible for assessment of dust impact of an existing Waste Transfer Station. Included commissioning a survey of soiling rates. Presentation of evidence at a Public Inquiry.

Landfill Site, Cornwall (1995)

Assessment of dust implications of two proposed landfill sites, and contribution to Environmental Statement in support of Planning Application.

Expert Witness, Sand and Gravel and Landfill Proposal, London (1995)

Responsible for prediction and assessment of dust arising from a proposed sand and gravel and landfill operation, and assessment of the air quality impact of development traffic. Included presentation of evidence at a public inquiry, on behalf of Thames Waste Management.

Sand and Gravel, and Landfill Site, London (1995)

Assessment of dust implications of proposed sand and gravel and landfill operation, for Environmental Statement in support of Planning Application.

Landfill Proposal, Midlands (1993)

Responsible for assessment of dust impact arising from a proposed landfill site.

Opencast Coal, Wales (1993)

Responsible for expert assessment of dust nuisance arising from an opencast coal operation, in preparation for formal proceedings.

Urban Redevelopment, London (1992-1993)

Contributed to design of dust monitoring programme for a redevelopment site and to analysis of results.

Expert Witness, Sand and Gravel Proposal, UK (1992)

Responsible for preparation and presentation of evidence on dust impact of proposed sand and gravel quarry.

Opencast Coal Proposal, Staffordshire (1992)

Responsible for assessment of dust impact on adjacent landowner and preparation of proof of evidence.

Construction Sites, Nuisance Dust Guidelines, London (1990-1991)

Project Director for a study designed to determine guidelines for nuisance dust arising from construction sites.

Opencast Coal Proposal, Staffordshire (1990)

Responsible for evaluation of dust impact on local residential areas.

Nuisance Dust, Various Projects, London (1985-1989)

Project Director for studies of dust nuisance from waste transfer stations, industrial premises and traffic.

Sources of Metals in Dust, London (1985-1989)

Project Director for investigation into the sources of metals in background dust in areas of Greater London showing higher baseline levels.

Metals in Dust, London (1984-1987)

Contributed to a study of the spatial distribution of metals in background dusts across the Greater London area.

Emissions

Emissions Monitoring, Avon, UK (1993)

Responsible for monitoring dust emissions from mobile emission source on industrial site.

Point Source Emissions, London (1991-1992)

Project Manager for survey of all major point sources of emission in the Greater London area.

Emission Survey, London (1983-1986)

Project Manager for inventory of nitrogen oxides and sulphur dioxide emissions for the Greater London area and modelling of annual average concentrations.

Ground Contamination

Chemical Plant, Contaminated Land Issues, South Wales (1992-1993)

Responsible for evaluation of contamination issues from decommissioning of a chemical plant.

Landfill, Gloucestershire (1993)

Responsible for assessment of liability risks involved with a small landfill site.

Chemical Plant, Groundwater Contamination, South Wales (1991)

Project Manager for investigation of groundwater contamination from leak at a chemical plant and carrying out remedial works.

Environmental Reviews

Food Industry, Environmental Review, Central England (1993)

Contributed to environmental review of food packaging and distribution company.

Manufacturing Company, Environmental Review, South West England (1992)

Project Manager for environmental review of manufacturing site operations and review of BS 7750 requirements.

King's Cross Redevelopment, London (1990)

Contributed to preparation of environmental code to control air quality impact during construction.

Indoor Environment

Indoor Air Quality in Print Works, Bristol (2016)

Responsible for investigation of indoor air quality and odours in a print works arising from cleaning solvents. Included sampling of VOCs to determine occupational exposure levels.

Indoor Air Quality Monitoring, Bristol (2012)

Responsible for investigation of indoor air quality following concerns from staff about the indoor air quality. Included sampling of VOCs.

Museum Air Quality (2009-2010)

Responsible for investigation of staff concerns about air quality within a museum. Measured temperature, humidity, carbon dioxide and examined samples of dust. Advice was provided on measures to improve workplace conditions.

South African Indoor Air Quality Standards (2009)

Contributing to the ongoing development of standards for indoor air quality in South Africa on behalf of the South African National Department of Health.

Workplace Air Quality (2003)

Responsible for investigation of staff concerns about air quality. Measured temperature, humidity, carbon dioxide. Deposited dust was measured with the glass slide method and samples examined by optical microscopy. Advice was provided on measures to improve workplace conditions.

Office Related Asthma, South London (1992)

Responsible for investigation into causes of asthma incidents in an office operated by an Insurance Company.

Road Traffic Pollution Impact on Office Environment, Bristol (1990-1991)

Project Manager for study of impact of outside air quality on conditions in an air conditioned office block.

Indoor Environment Investigations (Various), UK (1987-1989)

Investigations of office environment problems (sick building syndrome), involving questionnaire surveys and environmental monitoring.

National Survey of Indoor Nitrogen Dioxide Exposure, UK (1989)

Project Director for pilot survey on behalf of the Department of the Environment of individual exposure to nitrogen dioxide.

Miscellaneous

Edinburgh Lead Study (1983-1989)

Environmental Consultant on epidemiological study of the effects of lead on the behaviour and abilities of young children and identification of their sources of exposure to lead. Project funded by the Medical Research Council and the Scottish Home and Health Department.

Trace Metal Behaviour in Freshwaters, Edinburgh (1980-1983)

Principal Investigator for investigation of trace metal adsorption in freshwaters under realistic conditions. Project in collaboration with the Freshwater Biological Association, Windermere.

Heavy Metal Chemistry in Effluents, Lancaster (1978-1980)

Responsible for investigation into the speciation of heavy metals in industrial and sewage treatment works' effluents and their receiving waters, and in drinking water.

Environmental Lead Behaviour, Lancaster (1978-1980)

Involved in joint supervision of two post graduate students working on the natural methylation of lead and the chemistry of lead in highway runoff.

Lead Pollution, UK (1978-1980)

Co-author of a book on 'Lead Pollution': Causes and Control'

Lead Behaviour in the Atmosphere, Lancaster (1975-1978)

Responsible for research study of the behaviour of tetraalkyl leads in the atmosphere, in collaboration with Associated Octel.

Lead in Highway Runoff in the UK (1976)

Carried out a review of lead in highway runoff waters.

Highway De-icing Salt, Lancaster (1973-1975)

Responsible for study of the dispersal of highway de-icing salt.