

Current Position:	Director of Air Quality Consultants Ltd.
Year of Birth:	1952
Nationality:	British
Qualifications:	BSc (Hons) Applied Biology (1972) MSc Environmental Technology (1978) DIC Diploma of Imperial College (1978)

Positions Held:

- Member of the UK Government's Quality of Urban Air Review Group (QUARG) (1994-1997)
- Chair of Environmental Protection UK (formerly NSCA) Air Quality Committee, and Member of Council (2003-2012).
- Chair of NSCA Working Group on Designation of Air Quality Management Areas (1999-2000)
- Member of EC Working Group on Polycyclic Aromatic Hydrocarbons (1999-2001)
- Member of CEN Technical Committee 264 Working Group 15 on PM₁₀ and PM_{2.5} Measurement Methods (2006-ongoing)
- *Ex Officio* Member of UK Government's Air Quality Expert Group (AQEG) (2002-2007)
- Member of DfT Airport Air Quality Panel (Project for the Sustainable Development of Heathrow) (2004-2006)
- Member of the Institution of Environmental Sciences (MIES)
- Member of the Institute of Air Quality Management (MIAQM)
- Chartered Environmentalist (CEnv)

Key Experience:

Mr Moorcroft has over thirty-five years' postgraduate experience in environmental sciences. Prior to joining Air Quality Consultants in November 2004, he was the Managing Director of Casella Stanger, with responsibility for a business employing over 100 staff and a turnover of £12 million. He also acted as the Business Director for Air Quality services, with direct responsibility for a number of major Government projects. He has considerable project management experience associated with Environmental Assessments in relation to a variety of development projects, including power stations, incinerators, road developments, airports etc., with particular experience related to air quality assessment, monitoring and analysis. He has contributed to the development of air quality management in the UK, and has been closely involved with the LAQM process since its inception. He has given expert evidence to numerous public inquiries, and is frequently invited to give presentations and seminars.

Main areas of expertise:

- Project management of large and complex contracts for central government and agencies;
- Ambient air quality monitoring methods for both particulate and gaseous species, including procurement, commissioning, calibration and quality control;
- Dispersion modelling for the assessment of air quality impacts related to existing and proposed infrastructure developments;
- Preparation of detailed technical and policy guidance documents related to air quality issues;
- Preparation of expert evidence.

Employment Record:

2004-date	Director, Air Quality Consultants Ltd.
1983-2004	Casella Stanger (now Bureau Veritas) Managing Director (2001-2004) and Business Director of Air Quality Department (1993-2004)
1978-1983	Applied Geochemistry Research Group, Imperial College London Research Assistant

Air Quality Management and Policy

Low Emissions Strategy – West London (2012-14)

Responsible for a project on behalf of the West London local authorities to recommend and evaluate potential measures to improve air quality in LB Hillingdon and in the vicinity of Heathrow Airport. Measures considered include access charging schemes and an Ultra Low Emission Zone in the vicinity of Heathrow Airport.

Guidance on Pollution Related to Construction Sites (2013)

Contributed to a project for the French Agency for Environment and Energy Management (ADEME) to provide guidance and best practice information on pollution arising from demolition and construction sites.

Air Quality Neutral: Planning Support (2012-13)

Responsible for a project on behalf of the Greater London Authority to provide guidance on the implementation of the “air quality neutral” policy as defined in the London Plan. A variety of options were considered, culminating in an approach based on “benchmarking”. Suitable benchmarks for both building and transport related emissions were derived and tested against previous projects. The outcome of the study was used to inform the 2013 Draft SPD on Sustainable Design and Construction.

Options for an Exposure Reduction Approach 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 the Effectiveness of Air Quality Action Plans (2012)

Responsible for a Defra research project to evaluate the effectiveness of local authority air quality action plans. The study included a review of selected action plans to date, and identified a number of options to improve the effectiveness of the action-planning approach. The study also included recommendations on the reporting burden for Review and Assessment.

Research into PM_{2.5} Concentrations in the UK (2010-2011)

Contributed to a project funded by the UK regulators (via SNIFFER – the Scottish and Northern Ireland Forum for Environmental Research) to prepare a report on PM_{2.5} in the UK. The report provided a detailed review of the health effects, sources, speciation, monitoring and modelling approaches for PM_{2.5}, together with an analysis as to how PM sources need to be regulated in order to achieve the limit values. The report concluded with a number of recommendations for further research.

Development of National AQMP Support Programme (2010-2011) – South Africa

Contributed to the review of the Air Quality Management Plan process for the Department of Agriculture, Tourism and Environmental Affairs (DEAT) in South Africa. This included an evaluation of the AQMP process to date, the preparation and analysis of a detailed questionnaire survey, and recommendations to build and improve AQMP capacity in the national, provincial and municipal authorities.

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)

Responsible for 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.

Appraisal of London Boroughs’ LAQM Processes (2009-2010)

Responsible for a project to provide consultancy services to the Greater London Authority to assist them in the appraisal of Boroughs’ LAQM processes. The study involves the appraisal of all review and assessment and action plan reports, the provision of a Helpdesk for London Boroughs, input to the Mayor’s Air Quality Strategy, and the organisation of workshops to promote best practice.

Development of Indoor Air Quality Guidelines – South Africa (2009-2010)

Responsible for a project for the development of guidelines and monitoring protocols related to the assessment of indoor air quality in South Africa, on behalf of the National Department of Health (NDoH). The project is to recommend appropriate guidelines and monitoring methods and prepare protocols and training workshops.

Provincial Air Quality Management Plan – Free State Province, South Africa (2008-2009)

Contributing to a project coordinated by Zanokuhle Environmental Services on behalf of the Department for Environment and Tourism (DEAT), to prepare an Air Quality Management Plan for the Free State Province.

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

Responsible for the development of evaluation criteria for AQMPs in South Africa. The project was carried out for Zanokuhle Environmental Services on behalf of the Department for Environment and Tourism (DEAT). The objective was to provide a suitable evaluation mechanism for inclusion into the draft implementation manual for air quality management and reporting. Criteria were developed based on existing systems, and then adapted to suit the South African requirements. These criteria were then applied to evaluate four AQMPs.

Assessment of Local Authority Review & Assessment Procedures (2004-2010)

Contributed to a contract on behalf of Defra and the Devolved Administrations to appraise all local authority Review and Assessment reports. Includes the provision of a Helpdesk to provide assistance to local authorities, and the preparation of informal and formal guidance. Carried out in association with the 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. The contract is led by netcen, together with Bureau Veritas. Principal inputs include the development of FAQs, development of methods for nitrogen dioxide tubes, and future updates of LAQM Technical Guidance.

Provision of AQ Management Services – Fenland District Council (2006–2010)

Responsible for providing professional services to Fenland DC to assist with the delivery of responsibilities related to Local Air Quality Management over a two year period. Includes the preparation of Detailed and Further Assessments, and the ratification of automatic monitoring data.

Air Quality Action Plan - Westminster City Council (2005-2006)

Contributed to the development of the revised Action Plan and Strategy for Westminster City Council. This included facilitation of a stakeholder workshop to identify potential measures for incorporation into the Plan, and the drafting of the initial document.

Exposure-Reduction Approach to Air Quality Management in UK and EU (2004-2005)

Contributed to a study of options for a new exposure-reduction approach to air quality management in the UK and the EU for non-threshold pollutants, and in particular for PM. Project was carried out on behalf of Defra.

Yorkshire & Humber – Regional Air Quality Project (2004-2005)

Responsible for further development of the Regional Environmental Baseline and the Regional Environmental Hub. Project involved the collection of air quality data, including the definition of protocols, and preparation of suitable formats and mechanisms for updating the monitoring data in future years.

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

Responsible for a scoping study for the collation of baseline air quality data to help inform Strategic Environmental Assessment work within the Yorkshire and the Humber Region. Included the operation of a stakeholder workshop.

Tyne and Wear Air Quality Steering Group (2004–2007)

Responsible for the provision of support to the Tyne and Wear Steering Group for Review and Assessment work. This included the preparation of the Detailed Assessments for all Tyne & Wear authorities, and the preparation of an Air Quality Strategy. Work is continuing to finalise the Further Assessments as required, and to prepare Action Plans for incorporation into the LTP. The study is being undertaken with the University of West of England.

Air Quality Action Plan – Charnwood Borough Council (2004)

Responsible for the completion of a draft action plan for the local authority. This included meetings with a steering group to identify the measures that were currently in place and under development, and the drafting of a report for inclusion in the action plan.

Preparation of Technical Guidance Notes (1998-2009)

Responsible for the preparation of the Secretary of State's technical guidance documents LAQM.TG3(98), LAQM.TG3(00), LAQM.TG4(00), LAQM.TG(03) and LAQM.TG(09) relating to the use of dispersion models and pollutant specific guidance for local authority review and assessment.

Update of Design Manual for Roads and Bridges (2003)

Contributed to a joint project team for the updating of the DMRB Screening Model on behalf of the Highways Agency and Defra.

Defra Model Helpdesk (1998-2004)

Responsible for the operation of the Model Helpdesk on behalf of Defra. The helpdesk provided advice to local authorities on the application of dispersion models for review and assessment, and stack height calculations. An Internet site was set up to support the service, which included downloadable models for road traffic assessments and stack height calculations.

Validation of DMRB Model (2000-2001)

Responsible for a DETR-funded project to validate the review and assessment version of the DMRB model. Model runs were carried out at sites within the UK Automatic Network, using local traffic data provide by the local authorities. An assessment of the overall performance of the model was provided, together with recommendation for improving model accuracy.

Review and assessment for PM₁₀ (1999)

Responsible for the completion of an advice note (in association with Air Quality Consultants and AEA Technology) to assist local authorities in the review and assessment of PM₁₀, on behalf of Defra.

Environmental Protection Programme Abu Dhabi Emirate (1993-1995)

Contributed to a study to devise an environmental protection programme for the Abu Dhabi Emirate. An inventory of all significant emissions was carried out, and used as input data to computer models to predict the impact of both point and mobile sources upon air quality. Air quality criteria were also recommended, and a suitable environmental monitoring programme proposed to determine compliance with the standards and guidelines. Significant sources were identified, and recommendations for future emission control provided where necessary.

Air Quality Monitoring

Assessment of Air Quality Monitoring – Port of Durban (2013)

Responsible for an evaluation of monitoring data at three locations in the vicinity of the Port of Durban. The data were analysed using the OpenAir software to identify the principal source contributions.

Review of London Air Quality Monitoring Networks (2011)

Responsible for a project carried out on behalf of the Greater London Authority to review the automatic air quality networks in London. This project considered the current and future monitoring requirements to support policy development in London, identified the priority monitoring sites, and provided recommendations for enhanced monitoring.

UK Automatic Urban & Rural Air Quality Monitoring Networks (1992-2004)

Responsible for the Central Management and Co-ordination Unit (CMCU) for the AURN on behalf of Defra. The networks significantly expanded over the decade of operation to include more than 100 stations continuously monitoring NO_x, SO₂, CO, O₃ and PM₁₀. The CMCU is responsible for management and operation, data collection and validation, procurement and commissioning of new sites.

Particle numbers and concentrations in the UK (1997-2005)

Responsible for a Defra-funded project carried out in association with the University of Birmingham. Measurements of co-located PM₁₀ and PM_{2.5} were carried out at 4 sites, with fractionated particle counts (using SMPS analysers) at 3 sites. The project was expanded to include additional CPC particle counts at 6 further sites, and continuous total/elemental carbon and particulate nitrate at a further 2 sites.

PM₁₀ and PM_{2.5} Gravimetric Determinations (1999-2004)

Responsible for the establishment of the UK Network on behalf of Defra to undertake gravimetric determinations (to EN12341) of PM₁₀ and PM_{2.5} at selected monitoring locations in the UK.

UK Intercomparison Exercise for PM₁₀ (1999-2006)

Contributed to the UK intercomparison exercise to demonstrate equivalence between the European transfer reference sampler and a variety of continuous and semi-continuous analysers. This has involved the establishment of co-located sampling sites in the UK, and statistical analysis of results.

Heavy metal concentrations in the vicinity of industrial processes (1999-2004)

Responsible for a Defra-funded study to assess airborne heavy metal concentrations in the vicinity of 30 industrial processes in the UK. Monitoring carried out for Pb, Cd, As, Ni and Hg (particulate and vapour phase).

Review of Air Quality Monitoring in London (2003)

Contributed to a review of air quality monitoring carried out in London on behalf of the Greater London Authority. The report considered the pollutants of concern, the current status of air quality monitoring in terms of the numbers of sites, the data management and reporting structures, and the requirements for the future. Recommendations for structuring air quality monitoring within London were provided.

Technical Guidance Document M17 (2003)

Contributed to a contract with the Environment Agency to draft a technical guidance note on monitoring of ambient particulate matter around licensed waste facilities.

Review of Kent Air Quality Monitoring Network (2001)

Responsible for a review of the KAQMN on behalf of the local authorities. The report considered the pollutants of concern, the existing numbers and locations of monitoring stations, the data management and reporting, and QA/QC arrangements. Recommendations for the future operation of the KAQMN were provided.

Technical Guidance Document M13 (2000)

Contributed to a contract with the Environment Agency to draft a technical guidance note on monitoring of hydrogen sulphide in stack emissions and in ambient air.

Technical Guidance Document M8 and M9 (1998)

Responsible for a contract with the Environment Agency to draft a technical guidance notes on ambient monitoring methods and strategies.

Ambient Air Quality Monitoring Strategy Bulgaria (1992)

Responsible for an assignment for the Ministry of Environment in Bulgaria to prepare a strategy for future ambient air quality monitoring. An assessment was made of principal emission sources and pollutants, and both existing and future monitoring and modelling capabilities. Recommendations for the most cost-effective strategy for air quality were defined.

Transport Projects – Roads

Air Quality Guidelines for National Road Schemes - Update (2010)

Responsible for updating the NRA guidelines based on advances in scientific understanding.

Frontier and Airport Access Road - Gibraltar (2007)

Provided input to the air quality chapter for the ES for the proposed new Frontier and Airport Access Road in Gibraltar. This included the collation of monitoring data, and detailed dispersion modelling to quantify the potential impacts.

Environmental Statement – London Low Emissions Zone (2006)

Responsible for the preparation of the air quality chapter for the ES on the London Low Emissions Zone. This included the collation of modelling data, and presentation of results to demonstrate the positive benefits of the scheme.

Air Quality Advice to Scottish Government 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 is to advise on legal and procedural compliance and to raise the standard of road assessment through review and constructive comment.

Air Quality Assessment of Proposed Thames Gateway Bridge, London (2003-2005)

Contributed to an 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.

Air Quality Guidelines for National Road Schemes (2005-2006)

Responsible for the preparation of detailed guidelines for the air quality assessment of national road schemes, on behalf of the National Roads Authority, Ireland.

Expert Witness – Proposed Hatton Cross Park & Ride Scheme (2005)

Responsible for the air quality assessment of a proposed P&R scheme at Hatton Cross. Evidence was presented at the Public Inquiry on behalf of the local authority opposing the scheme.

N6 Ballinasloe to Athlone Road Scheme (2005)

Contributed to the air quality assessment of the proposed road scheme, including assistance with the preparation of evidence presented to the Public Inquiry. The project was led by Jacobs Baktie.

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

Contributed to the updating of the DMRB, including the design of the Emissions Factor Toolkit used as the basis for deriving emissions factors within the spreadsheet

A500 Stoke 'Pathfinder' Improvement Scheme (2000-2003)

Responsible for the air quality assessment of the proposed junction improvement and realignment of the A500 through Stoke-on-Trent. The initial air quality assessment based on DMRB methodology was carried out for the Preferred Route and 'do-minimum' options for the submission of route plan. Evaluations of the Environmental Assessment submitted by the selected D+B contractor were carried out.

Anglo-Indian Sustainable Transport Strategy (2001)

Representative on behalf of DETR on the Steering Group for the 2 year research project to introduce sustainable transport initiatives into major Indian cities. Specific responsibility for overseeing the air quality component of the project, which includes the compilation of an emissions inventory for Delhi, detailed dispersion modelling, and the formation of transport related action plans.

Expert Witness - Greenwich PFS Development (1999-2000)

Responsible for the assessment of the potential air quality impact of a proposed PFS at a retail park in Greenwich, SE London. A detailed dispersion modelling study was carried out to assess the impacts. Expert evidence was submitted to the Public Inquiry on behalf of the developer (Sainsbury's Ltd).

Manual for Multi Modal Environmental Assessment (2000)

Responsible to the Scottish Executive, National Roads Directorate, for advising on the draft MMMEA, with specific regard to its application in Scotland.

Guidance Manual on Strategic Environmental Assessment for Multi-Modal Studies (2001)

Responsible for the provision of advice to DETR on the draft guidance. Specific issues related to the compatibility with LAQM guidance was carried out.

Expert Witness - Greenwich Lorry Ban (1998)

Responsible for the assessment of the air quality impacts associated with the introduction of a ban on HGV movements through Greenwich town centre. A detailed dispersion modelling exercise was carried out to assess the benefits in the town centre, and dis-benefits along the diversion routes. Expert evidence was submitted to the Public Inquiry on behalf of the local authority (Greenwich Council).

Ipswich Air Quality Study (1998)

Responsible for a detailed assessment of the transport contribution to urban air quality in Ipswich. Study includes monitoring of NO_x, CO and benzene; inventory of transport sector emissions along significant highway routes; and detailed modelling of air quality at significant locations.

M1 and M6 Widening Schemes (1996-1998)

Contributed to the air quality assessment of the proposed widening schemes to sections of the M1 and M6 motorways in accordance with the DOT's Manual of Environmental Appraisal. Involved a preliminary assessment of the relative impact of a number of widening options, together with recommendations for the preferred strategy. A more detailed survey was carried out for the selected options, for incorporation into the Stage II and Environmental Assessments.

Western Orbital Route (1995-1996)

Contributed to the EIA for the major by-pass route in the West Midlands. A detailed assessment was prepared according to the Department of Transport's Design Manual for Roads & Bridges and has included a number of receptor locations along the route corridor, and within an extensive area of the overall road network.

Review of Manual of Environmental Appraisal (1994)

Contributed to a detailed review of the Manual of Environmental Appraisal (MEA) on behalf of the Transport Research Laboratory. A number of previous MEA reports were critically reviewed for the air quality, noise and ecological aspects, and the adequacy of the methodology assessed. Recommendations for revisions to the MEA were prepared, a number of which have now been incorporated into the New Design Manual for Roads & Bridges.

Air Quality Assessment Kidderminster, Blakedown & Hagley Bypass, West Midlands (1994-1995)

Contributed to the preparation of the EIA for the proposed bypass route. The study involved a detailed assessment of the air quality and noise aspects using predictive computer models (CALINE4 AND MWAY). Particular consideration was also given to the potential impact of run-off at sensitive locations, and the impact of salt spray from a viaduct transecting a Site of Special Scientific Interest.

Transport Projects – Airports

Airports Commission (2014-2015)

Contributed to the Airports Commission's Appraisal Framework Module 6: Air Quality Local Assessment. Specific responsibilities involved overseeing a detailed emissions inventory and dispersion modelling study to assess the air quality impacts of the three shortlisted schemes for the new runway. Acted as lead author on the report that was submitted to the Airports Commission.

London City Airport – CADP (2012-2014)

Responsible for the air quality assessment prepared to support the Environmental Statement for the planning application for the City Airport Development Programme (CADP). The CADP comprises the construction of seven new stands and associated infrastructure. A detailed modelling study based on ADMS-Airport was undertaken to quantify the likely significant effects.

London Luton Airport (2012)

Responsible for the air quality assessment prepared to support the Environmental Statement for the planning application for the expansion of operations at London Luton Airport, comprising dualling of the access route, terminal improvements, taxiway extensions and associated infrastructure. A detailed modelling study based on ADMS-Airport was undertaken to quantify the likely significant effects.

Redhill Aerodrome (2011)

Responsible for the air quality assessment prepared to support the Environmental Statement for the planning application for the expansion of operations at Redhill Aerodrome, comprising the construction of a hardstanding runway and associated infrastructure. A detailed modelling study based on AERMOD was undertaken to quantify the likely significant effects.

London City Airport – VOC Study (2010)

Responsible for a study to evaluate the contribution of Airport operations to VOC concentrations and odours. This involved the measurement of ppb VOC concentrations in and around the Airport together with a log of Airport activities and perceived odour strengths.

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

Contributed to 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.

London City Airport – Expansion of Capacity (2007-2008)

Responsible for providing the air quality assessment to quantify the potential impacts associated with the expansion of operations at London City Airport for 80,000 to 120,000 air transport movements per year. The study included a detailed dispersion modelling assessment of both airport and road traffic emissions. The assessment was incorporated into the Environmental Statement.

Analysis of fast-Track NO_x data at Heathrow Airport (2006–2007)

Contributed to a study to evaluate fast track NO_x measurement data that were collected during a short term monitoring campaign at Heathrow Airport to support the PSDH work. The study matched individual aircraft movements with identified NO_x peaks at a monitoring station close to the northern runway, and demonstrated the relationship between mean peak height and airframe/engine combinations.

Stansted Airport – Expansion to 35 mppa (2006–2007)

Responsible for providing assistance to Uttlesford DC in the evaluation of the ES prepared for the expansion of operations to 35 mppa. Expert evidence was presented to the Public Inquiry.

Gibraltar Airport – New Terminal (2007)

Contributed to the air quality assessment to quantify the potential impacts associated with the proposed new terminal at Gibraltar Airport. The study included a detailed dispersion modelling assessment, and consideration of both human health and ecological impacts. The assessment was incorporated into the Environmental Statement.

Bournemouth International Airport – Expansion to 3mppa (2006-2007)

Responsible for the air quality assessment associated with expansion of operations to 3 mppa. The assessment considered both human health and ecological impacts, and included a detailed dispersion modelling study. The assessment was incorporated into the Environmental Statement.

Bournemouth International Airport – New Terminal (2005)

Responsible for an air quality assessment to quantify the potential impacts of the proposed new terminal development. The assessment focussed on the impacts of nitrogen deposition to the adjacent designated habitats. A detailed dispersion modelling study was carried out, and an assessment prepared with regard to the relevant Critical Levels and Critical Loads.

London Gatwick Airport – Audit of Environmental Report (2001-2004)

Responsible for an audit of air quality aspects detailed in the Environment Reports prepared by Gatwick Airport (BAAG). This involved a detailed assessment of the targets and progress reported against a variety of air quality objectives. These included actions taken to improve air quality monitoring and the reporting of data, and operational measures, such as reduction in taxi times, increased use of FGEP, implementation of 'emissions charging' schemes and ground fleet management.

Midlands Regional Airport Study (2002)

Contributed to an assessment of the environmental issues raised in connection with Birmingham International Airport (BIA) following the publication of the Midlands Regional Airport Study by the UK Department for Transport (DfT). The study involved a critical review of the methodologies and assumptions used in the determination of the environmental impacts of the possible development options for BIA, including maximum use of the existing runway, construction of a new closed-space 2nd runway, and construction of a new wide-spaced 2nd runway.

London Luton Airport - Terminal Expansion (1999-2000)

Responsible for the preparation of detailed air quality assessment of the proposed terminal expansion. Assessment included analysis of baseline conditions and predictions of current and future air quality associated with airport operations.

South East Airports Appraisal Framework (1999-2000)

Responsible for the provision of air quality input to the consortium developing the framework on behalf of DETR for the appraisal of new airports in the south east of England.

Liverpool Airport (1999-2000, and 2002)

Contributed to the completion of the air quality assessment of the proposed terminal expansion for inclusion in the submitted EIA. Scope of work included a detailed emissions inventory and dispersion modelling to predict impacts at nearby residential properties.

East Midlands International Airport (EMIA) - Runway Extension (1998-1999)

Responsible for a detailed air quality assessment of proposed runway extension at EMIA. The study involved a review of existing air quality conditions, and predictions of current and future air quality associated with airport operations.

Review of Air Quality Assessment Anglia Airport (1999)

Contributed to a review of air quality assessment completed for expansion of Bentwaters RAF base to include commercial and passenger air traffic. Advice was provided to planning department of the local authority.

Review of Air Quality Assessment Birmingham International Airport - Proposed Expansion (1997)

Responsible for the review of air quality assessment prepared for the proposed terminal expansion at Birmingham International Airport.

Assessment of Air Quality Impacts Filton Airfield Redevelopment (1999-2000, 2002 and 2003)

Contributed to the preparation of the air quality impact associated with the redevelopment of land at Filton Airfield for housing and commercial purposes. The study included a detailed modelling assessment, including an assessment of the potential for odours to arise from engine testing. The study also investigated the potential for odour or fuel dumping problems to occur, and an extensive baseline monitoring survey.

Preliminary Assessment Heathrow Airport - 3rd Runway (1995)

Contributed to the preparation of a preliminary assessment of the air quality impact of a 3rd runway at Heathrow Airport. Emissions of both NO_x and hydrocarbons were considered with regard to established air quality criteria, and the potential for odour problems.

Environmental Assessment - London Heliport (1995)

Contributed to the assessment of the air quality impact of a proposed heliport in central London in association with preparation of the formal Environmental Statement. Involved identification of emissions and modelling of impact. Results were interpreted with regard to local background levels and relevant air quality standards and guidelines.

Air Quality Assessments

Albert Wharf Redevelopment – Hammersmith (2013-15)

Responsible for the air quality assessment to support the planning application for the mixed-use development at Albert Wharf. Involved detailed wind tunnel modelling to assess the potential impact of exhaust emissions from the concrete batching plant incorporated into the design (to maintain safeguarded wharf).

Sevington West, Ashford (2014-2015)

Responsible for the air quality chapter for the ES to support the planning application for the mixed-use development at Sevington West comprising over 150,000 sqm of light industrial and storage/distribution units.

Houghton Regis – GM Land (2014)

Responsible for the air quality assessment to accompany the planning application for the development of land in Central Bedfordshire to provide 7.3 hectares of B8 warehouse distribution space. The assessment focused on emissions associated with traffic generated by the scheme.

Greenwich Woolwich Central (2014)

Responsible for the air quality assessment to accompany the planning application for the Phase 4 development of Woolwich Central in Greenwich. The scheme provided for the construction of 530 apartments in 4 blocks. The study focused on the potential impacts associated with emissions from road traffic and energy centre emissions during operation, and dust emissions arising from the construction works. Recommendations for suitable mitigation via design were provided.

Ipswich Garden Suburb – Westerfield Road (2014)

Responsible for the air quality chapter for the ES to support the planning application for the residential-led development of Land West Of Westerfield Road, forming part of the proposed Ipswich Garden Suburb. The proposals included for up to 815 new homes, retail units and a new primary school.

Wembley SW Lands (2014)

Responsible for the air quality chapter for the ES to support the planning application for the mixed-use development at Wembley SW Lands. The study focused on the potential impacts associated with emissions from road traffic and energy centre emissions during operation, and dust emissions arising from the construction works. Recommendations for suitable mitigation via design were provided.

Concrete Batching Plant – Battersea (2013)

Responsible for the air quality assessment for the proposed new concrete batching plant at Cringle Street, Battersea. The proposals include the redevelopment of an existing concrete batching plant to make way for the proposed Thames Tideway Tunnel on part of the site. Consideration was given to the proposed mitigation strategies to minimise dust emissions from operations.

North Colchester Growth Urban Area Extension (2011-2013)

Responsible for the air quality assessment of the proposed development of land in North Colchester comprising approximately 2,200 dwellings and associated schools, retail development and infrastructure. The study focused on the potential impacts associated with emissions from road traffic and dust emissions arising from the construction works. Recommendations for suitable mitigation via design were provided.

Surrey Canal Triangle – London's Sporting Village (2010-2011)

Responsible for the air quality assessment of the proposed redevelopment of Surrey Canal Triangle for the provision of a sporting complex and residential accommodation.. The study focused on the potential impacts associated with emissions from road traffic and the energy centre, and dust emissions arising from the construction works. Recommendations for suitable mitigation via design were provided.

Wembley North West Lands (2011)

Responsible for the air quality assessment of the proposed redevelopment of the Wembley North West Lands for mixed use occupation.. The study focused on the potential impacts associated with road traffic and CHP/boiler emissions, and dust emissions arising from the construction works. Recommendations for suitable mitigation via design were provided.

Mixed-Use Development, Yeoman Street, London (2007)

Responsible for the air quality assessment of the proposed mixed-use development. The study focused on the potential impacts associated with road traffic emissions, and dust emissions arising from the adjoining industrial activities. Recommendations for suitable mitigation via design were provided.

Mixed-Use Development, Staines, Middlesex (2007)

Responsible for the air quality assessment of the proposed commercial, leisure and residential redevelopment of Majestic House, Staines, Middlesex. The study focused on the potential impacts of increased traffic flow on the local road network, taking into account potential cumulative effects of other developments. Recommendations on suitable mitigation measures were provided.

Expert Witness: Non-Food Retail Development, Gravesend (2007)

Responsible for the air quality assessment of the proposed non-food retail development at Northfleet, Gravesend. The study focused on the potential impact associated with increased road traffic on the local road network, using a detailed dispersion model. A proof of evidence was submitted to the Inquiry.

Residential Development, Little Ilford, London (2007)

Responsible for the air quality assessment of the proposed residential development at the Little Ilford Estate in east London. The study focused upon the potential impacts of road traffic emissions. Recommendations for suitable mitigation via project phasing were provided.

Residential Development, Eleanor Street, Sheffield (2006 – 2007)

Responsible for the air quality assessment for the proposed residential development in north east Sheffield. The study focused upon the potential impacts associated with the adjoining industrial operations, which included a waste transfer station. Monitoring of dust soling rates was carried out, and suitable mitigation measures proposed including the erection of a landscaped bund.

Mixed-Use Development, Chapel Wharf, Salford (2006)

Responsible for the air quality assessment of the proposed mixed-use development. The study focused on the potential impacts associated with road traffic emissions using a detailed dispersion modelling study.

Residential Development, New Eltham, London (2006)

Responsible for the air quality assessment of the proposed residential development at Avery Hill, New Eltham. The study focused upon the potential impacts of road traffic emissions.

Expert Witness: Mixed-use Development, Peruvian Wharf, London (2006)

Responsible for providing advice to the Greater London Authority on the air quality implications of the proposed mixed-use development at Peruvian Wharf. The study focused on the potential odour impacts associated with the adjoining industrial operations. Evidence was presented to the Public Inquiry.

Mixed-Use Development, New Cross Gate, London (2006)

Contributed to the assessment of the proposed mixed-use development at New Cross Gate. The study focused on the potential impacts of road traffic. Recommendations of suitable mitigation via design and ventilation were provided.

Residential Development, Imperial Wharf, Gravesend (2005-2006)

Responsible for the air quality assessment of the proposed residential development at Imperial Wharf. The study focused on the potential impacts of road traffic, and the impacts associated with dust emissions from the adjoining industrial operations.

Arbiter House, NW London (2005)

Responsible for the air quality assessment of the proposed reallocation of land use at Arbiter House to provide a school. The assessment considered existing monitoring and modelling data in light of guidance of where the air quality objectives should apply.

Air Quality Assessment Retail Superstore (1992)

Responsible for an air quality assessment for a proposed retail superstore in East London. Consideration of emissions from the car park and access roads was made, and predictions of the impact prepared. Particular attention was given to the potential impact of hydrocarbons, such as benzene, at a nearby school.

National Survey of Indoor Air Quality DOE (1987)

Contributed to a study carried out on behalf of the Department of the Environment to investigate indoor levels of nitrogen dioxide. Results of measured concentrations were assessed against building design and location and the activities of the occupants.

Air Pollution Assessment Vicinity of a Printworks, London (1987)

Contributed to an assessment of the air pollution impact of a major printworks upon the local environment. Concentrations of PAH and volatile organic compounds were measured in the ambient air, and the data assessed with regard to published concentrations and the potential risk to health.

Power Generation, Waste Management and Incineration

Saddlebrow Power and Recycling Facility, King's Lynn (2012)

Responsible for advising West Norfolk and King's Lynn BC on the application for a Energy from Waste Plant. Involved the critical review of the ES and supporting information, preparation of advice notes, and attendance at planning committee meetings.

Hazardous Waste Transfer Station, Ewelme, South Oxfordshire (2012)

Contributed to the preparation of air quality chapter for the Environmental Statement for the permanent retention of a hazardous waste transfer station in Ewelme. The assessment considered the impact of dust and odour arising from the operations at the waste transfer station on nearby residential receptors.

ROMP, Beacon Hill Landfill, Corfe Mullen, (2012)

Contributed to the preparation of air quality chapter for the Environmental Statement for ROMP of an existing landfill site at the former Beacon Hill brickworks. The assessment considered the impact of dust and odour arising from the operations at landfill site on nearby residential and ecological receptors.

Review of Biomass Plant Proposals – Scotland (2010)

Completed a high level review of the Scoping Reports submitted to Scottish Government for the proposed development of a number of major biomass installations across Scotland. The review made a number of recommendations for additional assessment and analysis.

Clinical Waste Incinerator – Seshengo, Limpopo Province, South Africa (2010)

Responsible for a critical review of the air quality assessment completed for the proposed clinical waste incinerator at Seshengo.

Kings Cross Centre (2009-2010)

Acted as advisor to Argent on air quality issues related to the KXC Energy Centre. Involved the review of air quality assessment reports, reinterpretation and negotiations with the local planning authority.

Lathbury Barracks – Gibraltar (2009-10)

Review and update of previous assessments including preliminary analysis of alternative sites. Provision of the AQ chapter to accompany the EIA for the 72MW diesel powered facility.

The Pinnacle – London (2009)

Critical review of the air quality assessment carried out for the proposed biofuel facility at The Pinnacle, on behalf of the City of London

Sipchem CO Plant, Jubail, Saudi Arabia (2007)

Contributed to the air quality assessment of the reformer heater at the proposed CO plant. Consideration was given to operations under normal conditions, and abnormal conditions when fuel gas with a high H₂S content may be used. A detailed modelling assessment using AERMOD was undertaken, and the results were compared with the relevant standards for the protection of human health and the environment.

Float Glass Factory, Yanbu Industrial City, Saudi Arabia (2006- 2007)

Contributed to the air quality assessment of the gas boiler plant associated with the proposed new gas boiler plant. A detailed modelling assessment using AERMOD was undertaken, and the results were compared with the relevant standards for the protection of human health and the environment.

Gas Oil Separation Plant, Shaybah Oil Field, Saudi Arabia (2006)

Contributed to the air quality assessment of the proposed Gas Oil Separation Plant (GOSP-4) at the Shaybah Oil Field. The SCREEN3 model was used to evaluate the potential impacts associated with a number of scenarios including the operation of the emergency LP and HP flares in normal operation, and with major fires. The results were compared with the relevant standards for the protection of human health and the environment.

Northern Area Flares Upgrades, Safinaya, Saudi Arabia (2006)

Contributed to the air quality assessment of the proposed new air-assisted flares at the Safinaya Gas Compressor Plant. The improvements were quantified using a detailed dispersion model, and the results compared with the relevant standards for the protection of human health and the environment.

Crematorium and Clinical Waste Incinerator, Gibraltar (2006)

Responsible for the air quality assessment of the proposed crematorium and clinical waste incinerator at Europa Advanced Road, Gibraltar. The study involved a detailed dispersion modelling assessment to quantify the potential effects upon human health and sensitive ecosystems.

Air Quality Assessment – Lathbury Barracks Power Station, Gibraltar (2005-2006)

Responsible for the air quality assessment of the proposed 35 MWth power station on Gibraltar. Assessment included a detailed dispersion modelling study to quantify the impacts upon both human health and sensitive vegetation.

Riverside Resource Recovery Facility, WtE Proposal, Belvedere (2002-2003)

Responsible for a critical review of the Environmental Assessment and IPPC application submitted for the proposed Waste to Energy facility at Belvedere, London.

Air Quality Assessment Explosives Complex - Kau Shat Wan, Hong Kong (1999)

Responsible for the air quality assessment of the design and operation of an explosives complex on Lantau Island. Involved a review of the environmental and hazard assessments, together with specific requirements for mitigation, monitoring and audit procedures prepared in association with the detailed design schedules. Specific consideration was given to the potential air quality impact of the proposed fireworks incinerator.

Environmental Impact Assessment Gas Treatment Plant, United Arab Emirate (1998)

Contributed to the EIA for the proposed gas treatment plant at Habshan, Emirate of Abu Dhabi. A detailed survey of all emissions arising from a 10,000 km² area was taken into consideration, in order to determine the potential impact of the new plant.

Expert Witness - Waste to Energy Project, Belvedere (1996)

Responsible for the assessment of the potential impact of a proposed 1.2 million tonnes/yr municipal waste incinerator at Belvedere, London. The study involved a critical review of the air quality, noise, ecology and waste handling sections of the environmental statement prepared by the developer. In particular, a major air quality modelling exercise was undertaken to assess the combined impact of a number of major existing and proposed emissions sources in the area. Evidence in respect of air quality emissions was presented to the Public Inquiry.

Air Quality Assessment Titanium Dioxide Plant (1989)

Responsible for a study to assess the air pollution impact of a titanium dioxide plant. Studies included dispersion modelling to predict the impact of gaseous and particulate emissions associated with a variety of on-site processes. The results were interpreted with regard to local background levels and established air quality criteria.

Air Pollution Assessment Iron Foundry, Hampshire (1989)

Responsible for a study to assess the impact of odorous emissions from an iron foundry. Study included sampling and analysis for a wide range of organic compounds, heavy metals and hydrochloric acid.

Expert Witness - Sewage Sludge Incinerator, Shell Green (1997)

Responsible for a critical review of the air quality, noise, ecology and risk analysis sections of the EIA prepared by the developer for a proposed sewage sludge incinerator. A detailed assessment of the sludge handling and filtrate treatment plant undertaken, with specific reference to the potential for odour problems to occur at nearby sensitive receivers. Evidence on air quality issues was presented to the Public Inquiry.

Clinical Waste Incinerator, Dundee (1996)

Responsible for a study to determine the air quality impact of a proposed 0.5 tonnes/hr clinical waste incinerator at Ninewells Hospital, Dundee. The air quality impact of both the existing and proposed plant was carried out in order to determine the environmental benefits, and a report for inclusion into the Environmental Statement was prepared.

Environmental Impact Assessment Scunthorpe CCGT (1994-95)

Contributed to the EIA for a proposed 295 MW combined cycle gas turbine power station and overhead lines. The assessment included detailed studies of the ecology of the area, air quality and dispersion modelling, water quality and land pollution, as well as extensive baseline noise monitoring and predictive work.

Environmental Assessment Cogeneration Scheme, Yorkshire (1996)

Contributed to the air quality assessment of a proposed 400 MW gas fired cogeneration scheme in South Yorkshire, for inclusion into the Environmental Statement.

Environmental Assessment Angle Bay Energy Project (1994-95)

Responsible for a study to determine the air, noise and ecological impacts of a proposed 1150MW gas fired cogeneration plant at the Texaco refinery in Pembroke, South Wales. Involved a study of the ecological value of the development site, and a review of the conservation value of the surrounding area which contains sites of both national and international importance. The potential air and noise impacts were determined using predictive modelling techniques, and the results interpreted with regard to established criteria. A report for inclusion into the formal Environmental Statement was prepared.

Expert Witness - Clinical Waste Incinerator, Gateshead (1995)

Responsible for the assessment of the potential impact of a proposed clinical waste incinerator at Follingsby, Gateshead. The study involved a critical review of the air quality, noise and ecology sections of the Environmental Statement submitted by the developer. Consideration was given to the potential impact of emissions to air, including dioxins, heavy metals and low-level radioactivity. Expert evidence was provided at the Public Inquiry.

Environmental Assessment Deeside Power Station (1994)

Contributed to the Environmental Assessment for a proposed 450MW combined-cycle gas turbine power station in North Wales. Baseline monitoring was carried out to determine existing levels of pollution and the noise climate. The impact of the proposed plant was then assessed using computer modelling techniques. Particular attention was paid to the potential ecological impact, and nature conservation in the Dee Estuary area.

Air Pollution Assessment South Denes Power Station, Great Yarmouth (1992-1993)

Contributed to the air pollution assessment of the impact of a gas-fired power station as part of an Environmental Statement. A baseline study of nitrogen dioxide levels was carried out, and computer modelling techniques used to assess the local impact of the proposed plant.

Environmental Assessment FGD Retrofit (1992-1993)

Responsible for a study to assess the air pollution impact of the proposed retrofit of flue gas desulphurisation to a 2000MW coal-fired power station at Ratcliffe-on-Soar. Studies included dispersion modelling to determine the current and future impact of the plant following FGD, for incorporation into the Environmental Statement.

Mineral Extraction and Dust

Western Area Deposits – Liberia (2008-2009)

Responsible for preparing the air quality chapter for the interim Environmental Statement related to the proposed extraction of iron ore in the Nimba region of Liberia.

Expert Witness – Horton Road Sand & Gravel Extraction, Slough (2008)

Responsible for the assessment of the potential road traffic impacts associated with the transport of sand and gravel from the proposed development. Evidence was presented to the Public Inquiry on behalf of the Mineral Planning Authority who were opposing the scheme.

Expert Witness – Long Moor Opencast, NW Leicestershire (2005)

Responsible for the assessment of the potential dust impacts associated with the proposed opencast development at Long Moor. Evidence was presented to the Public Inquiry on behalf of the Mineral Planning Authority who were opposing the scheme.

Expert Witness – Dust Impact Assessment for Thameslink 2000 (2005)

Responsible for the assessment of potential impacts of dust upon Guys & St Thomas's Hospital and the Kings College Campus. Detailed consideration was given to the specialised activities of the hospital and campus, and in particular the potential impacts of Aspergillus. Evidence was prepared for presentation to the Public Inquiry.

Expert Witness - Wester Torrance Opencast, North Lanarkshire (2001)

Responsible for the assessment of the potential dust impacts associated with site operations. Consideration was given to both airborne dusts (PM₁₀) and dust nuisance. Expert evidence was provided to the Public Inquiry on behalf of the developer (Fentons Ltd).

Harry's Burn Opencast, East Lothian (2001)

Responsible for a detailed review of the EIA carried out by the developer, on behalf of the planning authority (East Lothian Council). Consideration was given to the potential impacts associated with both airborne dusts (PM₁₀) and dust nuisance.

Expert Witness - Birch Coppice Opencast Development (1995-1996)

Responsible for the assessment of the potential nuisance dust impact associated with the proposed development of an opencast coal site at Birch Coppice, Warwickshire. A survey of existing dust deposition levels was carried out, and predictions of potential dust nuisance impact were carried out for several phases of site operation. Evidence was presented to the Public Inquiry.

Dunald Hill Quarry (1998)

Contributed to the EIA for the proposed extension of an existing limestone quarry. A detailed assessment of the potential impact of dust emissions was carried out, which involved an extensive baseline monitoring survey and dispersion modelling study.

Expert Witness - East Burnham Gravel Extraction (1995)

Responsible for the assessment of the potential ecological impact of the proposed winning and working of sand and gravel from a site in East Burnham, Buckinghamshire. Particular attention was paid to the implications of dust emissions upon the nearby woodland, and of any effects associated with drawdown of the water table. Evidence was provided at the Public Inquiry.

Expert Witness - Swineford and Bestwell Farms, Dorset (1994)

Responsible for the assessment of the potential air quality impact associated with traffic movements during the winning and working of sand and gravel from the proposed site in Dorset. Expert evidence was presented to the Public Inquiry.

Dust Impact Assessment London Docklands (1992-1997)

Responsible for a major study to investigate the potential dust impact associated with redevelopment works in London Docklands, with particular regard to the construction of the Limehouse Link road tunnel. Extensive monitoring has been carried out for both airborne and deposited dusts, and the results interpreted with regard to established and newly-developed guidelines. Advice upon mitigation measures has been provided where necessary.

Development of Nuisance Dust Guidelines (1992-1997)

Contributed to a study to develop guidelines for the assessment of nuisance dust using novel measurement techniques, including social surveys.

Nuisance Dust Monitoring in Relation to Waste Disposal (1992-1994)

Responsible for monitoring of nuisance dust emissions for a variety of waste transfer stations and landfill sites, licensed by the LWRA. Advice of suitable control measures where necessary was provided.

Environmental Code - Kings Cross Development (1989-1991)

Contributed to the production of an environmental code in connection with the proposed construction and operation of the Channel Tunnel terminal at Kings Cross, London. Guidelines for good housekeeping practices to reduce the air pollution impact were produced, and criteria for the assessment of environmental disturbances recommended.

Miscellaneous

London-Wide Environmental Programmes

Responsible for a range of environmental programmes to measure a number of pollutants in the Greater London area, including a nitrogen dioxide diffusion tube survey (120 sites), a benzene survey (60 sites) and a PAH survey (14 sites). Data are assessed on a London-Wide basis with reference to levels monitored in other locations, and with interpretation to appropriate standards and guidelines.

Woolwich Arsenal, London

Analysis of heavy metals, organics and cyanides in soils and waters was carried out, and proposals made for the reclamation of the area for development as a nature trail.

UK Survey - Heavy Metals in Dusts and Soils

Contributed to a Department of the Environment sponsored project for a nation-wide survey of heavy metals in urban dusts and soils. The study involved the collection and analysis of over 15,000 samples. Additional research work was concerned with source apportionment of metals in dusts, using Scanning Electron Microscopy and image analysis techniques.