

## **Odour Projects**

### **Bairds Malting**

Emission monitoring and odour assessment from a peat fired malting process in East Lothian. The operation provoked complaints when the peating process took place. Emissions were measured including olfactometry to determine the effectiveness of the existing scrubbing plant. Process odour was highly significant and is not treated effectively by the existing wet scrubber. Emissions were low temperature and wet. The emissions were entrained in the building wake. The emissions were modelled to assess the likely impact and determine if complaints were justifiable.

### **Diageo Whisky Distillery**

Advice on requirements for odour assessment at dark grains animal feeds plant on Speyside.

### **East of Scotland Water**

Detailed odour impact assessment at two proposed waste water treatment plants in the east of Scotland. Project work included compiling odour emission inventories, baseline odour surveys and dispersion modelling using ADMS. This study included reviews of potential odour abatement measures.

### **Eden Waste**

Odour impact assessment for proposed integrated waste management facility in Airdrie. The assessment included emissions modeling for fugitive releases from engineered landfill cap, landfill gas engines, flaring, composting and a dirty MRF processing 100,000 tpa. This assessment formed the basis of evidence presented at public inquiry.

### **EWOS**

Staged odour assessment at fishmeal plant to help the process operator achieve compliance with Environmental Protection Act and certificate of authorisation. The scope of work included compilation of emission inventory, measurement of sources using olfactometry and chemical speciation, evaluation of effectiveness of existing bio-tower performance and use of dispersion model to assess relative contribution from each source.

### **ERYC**

Expert witness for planning enquiry reviewing air quality, noise and odour amenity impacts from proposed landfill and composting facility on behalf of East Riding Yorkshire Council.

### **Fats & Proteins Lancaster**

Measurement of odour from animal rendering plant, prediction of dispersion and assessment for PPC application.

### **Fife Council**

Conducting a review of a proposed Integrated Waste Management Facility processing 500,000 t.p.a. and representation of the Council at a local public inquiry. The proposed development included an Materials Recycling Facility (MRF), composting plant, and construction and demolition waste recycling proposed by Alba. The main reasons for refusal were on grounds of noise, dust and odour.

### **Grangemouth**

Air quality and Odour impact assessment for combined composting, recycling and Combined Heat & Power plant using refuse derived fuel (200,000 tonnes/year).

### **Greenways/Hansons/WRG**

Detailed noise and air quality impact assessment from two proposed waste treatment facilities in the East of Scotland. The impact assessment included a noise assessment from the MRF buildings, landfill operations and road traffic to the site. Air quality considered odour from the existing landfills, extension and from the in-vessel composting of MSW.

### **Goldfinch**

Odour impact assessment from 150,000 poultry farm affecting proposed leisure facility in East Riding of Yorkshire.

### **HSP**

Odour impact Assessment for paint spraying operation affecting adjacent housing.

### **Kaimhill Fishmeal Odour**

Consultancy advice to small fishmeal processing operator on environmental compliance requirements to achieve BAT for odour control.

### **Linthouse Housing Association**

Review of odour assessments conducted by another consultancy for a proposed waste management facility on the south bank of the River Clyde. The review found significant methodological flaws in the assessments and identified the areas which required additional investigation.

### **Mushroom Farm**

Review of likely odour impact from mushroom composting facility.

### **North British Distillery Company**

Measurement of odours from six process emissions and dispersion modelling to predict the odour footprint around the works. This study examined the benefits from the existing abatement at the works and proposed changes to the process, and relative low cost abatement measures as a means of securing compliance with new IPPC odour standards.

### **Playfair Land Disposal**

Advice on management procedures to minimise odour from the disposal of malting wastes to agricultural land.

### **Royal Bank of Scotland**

Odour impact assessment from 100,000 poultry unit affecting high amenity office development and study of abatement options.

### **SCA Hygiene**

Air quality and odour impact assessments for proposed de-inking plant at Oakenholt North Wales and Tawd. These assessments examined proposed emission scenarios including combustion plant, paper machines and odour from wastewater treatment plant to compare impacts against draft PPC odour benchmarks.

### **Stereau**

A major study into odour from the recently upgraded WWTW at Dalmuir, one of the first big PFI works to come into operation. The planning permission for the site imposes an odour limit of 2.5 OUE/m<sup>3</sup> 98%<sup>ile</sup> at the boundary. The works treats the effluent from North Glasgow (with a population equivalent of 600,000). This study measured odour potential at various stages of the process and predicted odour concentrations using a dispersion model to assess compliance with the planning conditions.

**Scottish Water Solutions**

Assessment, review and advice for several large single/twin wind turbine layouts in remote locations.

**Tate & Lyle**

Preliminary odour impact assessment for 4,000 tonne day sugar refinery at Greenwich London. This included a review of odour from all process areas and outlined methods for quantification and assessment. The review highlighted areas for priority treatment including the waste water treatment plant and the fermentation plant.

**West of Scotland Water**

Detailed dispersion modelling study of odour from proposed WWTW treating effluent with 120,000 population equivalent including significant industrial wastes. Provision of expert witness to public local enquiry relating to noise and odour for proposed WWTW at Helensburgh, the first such inquiry in Scotland to impose objective odour limits.

**Ulster Farm By-Products**

Odour Impact Assessment for new thermal oxidation plant 2005 as part of PPC application.

## **Air Quality Projects**

### **A8 Edinburgh**

Conducting major study in the year 2002 along a 5 mile stretch of dual carriageway to the west of Edinburgh, the route to the airport and Edinburgh's growing business parks. (Between the Newbridge and Maybury roundabouts). Increasing traffic on this route could cause exceedance of air quality limit values, and restrict proposed commercial development. Working closely with the City Council, baseline levels of NO<sub>x</sub> were measured at kerbside, intermediate and background locations. An advanced dispersion model was used to predict the changes in air quality impacts likely to occur under a range of traffic growth scenarios. The study considered the significance of traffic speeds, congestion, and vehicle exhaust emissions. Good agreement was achieved between the observed and predicted concentrations. The evidence from the modelling assessment persuaded the City Council that air quality impacts associated with the proposed development traffic would be acceptable, in terms of statutory limits.

### **Able UK**

Expert witness at public enquiry for proposed car storage facility at former Thorpe Marsh Power Station, presenting evidence on air and noise impacts.

### **Alcan**

Environmental noise and air quality risk assessment for demolition of tanks, buildings and site remediation works at former Aluminium works at Burntisland Fife. The assessment included prediction of noise and dust releases from demolition using computer models. This helped inform the method of working for down-taking and resulted in additional pre-cleaning before removal. The project also involved continuous monitoring of noise, dust and wind conditions using on-line real time measurement instrumentation to monitor the impacts on the local community.

### **Badallan Open Cast Coal Mine**

Air quality impact assessment using fugitive dust modelling for a proposed open cast site and coal transfer station. Emission estimates were based on AP-42. Concentrations of PM<sub>10</sub>, TSP and dust deposition were modelled using ADMS-2. The assessment considered the effects of terrain on dispersion using digital terrain maps. The model was used to assess the relative importance of each source. The results from the model demonstrated that impacts would be well within air quality standards and nuisance guidelines.

### **Ballymoney Power plc**

Major study of air quality and noise from proposed 130Million tonne lignite mine in Northern Ireland. The study included assessment of impacts from the mine, operating over a 30 year period along with impacts from the 600MW power station.

### **Britannia Refined Metals**

An air quality impact assessment for Britannia Refined Metals (BRM) as part of an application for IPPC. BRM operates a high capacity primary lead refinery, the largest in Europe, refining over 200,000 tonnes of lead and 500 tonnes of silver per annum. The plant also contains a lead-acid battery recycling facility, one of only two in the UK. The process involves two different raw material process streams. The assessment included dispersion modelling from 8 point source for lead and SO<sub>2</sub>. The process is within a Local Air Quality Management Area, due to industrial pollution sources which include BRM and Tilbury Power Station on the north of the estuary. The modelling assessment included validation, taking account of local ambient monitoring around the process for both lead and SO<sub>2</sub>.

### **Bracknell**

A detailed dispersion assessment of NO<sub>2</sub> from traffic associated with a major town centre redevelopment project. The air quality impact assessment included baseline monitoring using continuous monitors and a diffusion tube study. Assessment included peak ambient concentration and annual averages to compare with National Air Quality Objectives. Dispersion modelling study examined impacts on 200 road links for baseline conditions and five future traffic scenarios.

### **Bovis & Westbury Homes**

Air quality impact assessment for proposed large-scale housing development adjacent to M5 in Gloucester.

### **Caberboard**

Study of TSP and formaldehyde around a Chipboard Plant. This study compared pollution levels with prevailing weather conditions and interpretation of these data using a variety of statistical techniques and Gaussian dispersion modelling. Review of current technology available in this industry comparing UK standards to current German practice.

### **Caledonian Paper Scotland**

Air quality impact assessment for proposed Light Weight Coated paper mill.

### **Dublin Waste to Energy MSW Incinerator**

Project reviewer of air quality and environmental noise impacts from proposed Dublin County MSW incinerator.

### **Euromet**

Design review of 3 tonne per hour rotary kiln incineration plant, BATNEEC review and assisting with IPC application. Detailed air quality impact assessment.

### **Highways Agency Stage 3 Assessments**

Conducting numerous air quality impact assessments for the Highways Agency for new Highway projects, including the A30 Bodmin bypass which involves air quality impacts on SSSI, the A14 in East Anglia and the A2 in London.

### **Highways Agency**

Expert Witness on air quality and noise at public inquiry for the A14 upgrading.

### **Investment Casting Process**

Air quality impact assessment for costume jewellery process in Ireland. Assessment included compiling detailed process inventory for EPA application. Assessment included dispersion modelling using ADMS with particular emphasis on lead deposition on surrounding agricultural land.

### **Lafarge Cement UK**

Dust management plan, negotiations with planning authority for conditions and implementation of monitoring scheme for ROMP at 1.5M tonne/year hard rock quarry.

### **North Ayrshire Council**

Dust Impact Assessment from proposed Municipal Solid Waste landfill at Bogside, Irvine.

### **Loch Lomond**

Air quality assessment of proposed new large scale tourist facility near Glasgow with 2 million projected visitors per year. Modelling the effects of traffic associated with the development using DMRB Vol. 11 and Caline 4.

#### **London Borough of Greenwich**

Road traffic on the A2 passes through the Kender Triangle on its way to and from Dover with predicted flows of upwards of 50,000 vehicles per day passing through residential areas. Working with the transport consultants to provide air quality assessment of various proposed traffic management measures intended to alleviate congestion.

#### **Liverpool Road Tunnel**

Lead environmental consultant for the proposed road tunnel scheme in Liverpool. This assessment involved detailed modelling of emissions in cuts and around the tunnel portals. This project for AMEC was a feasibility study for a proposed toll road using a former railway tunnel. The local authority had identified air quality impacts as a key issue. Emissions from the open sections of the route were assessed using conventional methodology. Emissions around the tunnel portals were complex due to the direction and velocity of the emissions and local topography. Two of the tunnel portals were located in deep cutting, with houses near the edge. The study team needed to know if the impacts from the portal emissions were likely to be significant in health terms as this could require fundamental redesign of the tunnel ventilation systems or relocation of tunnel portals. Using complex modelling techniques, it was demonstrated that the impacts were acceptable and that the project should be able to proceed without significant adverse impacts or redesign of the scheme.

#### **MOD Otterburn**

Dispersion modelling of HCl from rocket efflux associated with rocket practice range. Assessment of impacts on sensitive lichens recommending detailed measurement of ambient HCl concentrations and lichen study.

#### **Morrison Construction**

Expert Witness at land court hearing for Morrison Construction examining dust and noise impacts from proposed quarry.

#### **North Ayrshire Council**

Dispersion modelling of NO<sub>x</sub> from traffic emissions on the A78 and Part "A" combustion processes at Caledonia Paper and SmithKline Beecham as part of local authority Stage 2 review and assessment.

#### **North Lanarkshire Council**

Conducting a review of existing air quality data and final stage 2 report for the Council.

#### **Orkney Islands Council**

Assisting OIC achieve full authorisation for animal carcass gasification plant under EPA 1990; conducted detailed process audit to identify problems at the plant and developed detailed procedures for process. Additionally provided training for operators. This study also included background air quality monitoring, an operability review and revised commissioning programme.

#### **Ritchie Galvanising Plant, Brechin**

Detailed air quality impact assessment for proposed galvanising plant in Scotland. Assessment included developing detailed process description, dispersion modelling for lead emissions using ADMS and IPC application to SEPA. This study

included reviews of potential odour abatement measures.

**Rockware Glass**

Air quality study for large combination source (140 kg SO<sub>2</sub> / hr) using continuous UV and Chemi-luminescent ambient monitors and modelling emissions using in-house computerised version of R91.

**Sacone Environmental**

IPC application for BSE animal carcass gasification plant (6 tonnes/hr) including submission of application, BPEO, BATNEEC statement, environmental due diligence review for funding body (major Scottish financial investor), air quality impact assessment, dispersion modelling using ADMS, liaison with SEPA.

**Transbus**

Air quality impact assessment for proposed bus manufacturing plant in Falkirk.

## **Environmental Noise Projects**

### **Ballymoney Power plc**

Major study of noise from proposed 130 Million tonne lignite mine in Northern Ireland. The study included assessment of impacts from the mine, operating over a 30 year period along with impacts from the 600MW power station.

### **Bracco Wind Farm**

Environmental noise assessment from up to 45 Nordex 80 2.5MW wind turbines at upland site in central Scotland. The assessment included extended noise baseline measurements and predictions using computer model for three turbine layouts.

### **BP Grangemouth**

FFT vibration assessment on high pressure hydrocarbon gas fuel pipes to identify leaks on gate valves.

### **Blue Circle**

Environmental noise assessment around 1.5M tonne/year hard rock quarry at Dunbar Scotland.

### **Caledonian Paper Scotland**

Noise impact assessment for proposed Light Weight Coated paper mill.

### **Clydeport Hunterston**

Environmental noise survey around large deep water terminal at Hunterston peninsula. Study of plant noise and development of noise abatement plan to achieve compliance with local authority's criteria. Abatement measures also resulted in improved efficiencies and offloading at Terminal.

### **Dublin Waste to Energy MSW Incinerator**

Project reviewer of environmental noise impacts from proposed Dublin County MSW incinerator.

### **ERYC**

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### **Fife Council**

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### **Greenways/Hansons/WRG**

Detailed noise impact assessment from two proposed waste treatment facilities in the East of Scotland. The impact assessment included a noise assessment from the MRF buildings, landfill operations and road traffic to the site.

### **Highways Agency**

Expert Witness on air quality and noise at public inquiry for the A14 upgrading.

### **HSP**

Detailed environmental noise survey of two sites in Scotland assessing impacts from computer carcass engineering plant measuring impulse noise from presses and fan noise. Specification of abatement measures to ensure compliance with

Local Authority environmental noise criteria.

#### **ICI Ardeer**

Noise survey identifying tonal noise from vacuum pump on industrial process affecting housing at 1.5 km distance.

Attendance at two Public Inquiries for I&H Brown as expert witness on noise and air quality.

#### **Linthouse Housing Association**

Review and assessment of noise assessment conducted by another consultancy for a proposed waste management facility on the south bank of the River Clyde. The review found significant methodological flaws in the assessments and identified the areas which required additional investigation.

#### **London Borough of Greenwich**

Road traffic on the A2 passes through the Kender Triangle on its way to and from Dover with predicted flows of upwards of 50,000 vehicles per day passing through residential areas. Working with the transport consultants to provide noise assessment of various proposed traffic management measures intended to alleviate congestion.

#### **Malcolm Fraser Architects**

Noise assessment and prediction of internal noise from mechanical services including air conditioning, refrigeration plant, amplified music and kitchen noise in proposed high quality restaurant in the New Town. Detailed inventory of proposed sources and mitigation measures to comply with NR25 inside adjacent housing within 25 m and NR 45 inside restaurant area. Representation at Public Inquiry.

#### **Miller Homes**

Noise assessment and prediction of noise from Newcastle Chronicle affecting proposed residential development. The study identified cost effective mitigation measures and sound insulation design to print room facade surface, ventilation systems, compactors, cooling plant and vehicle movements.

#### **Morrison Construction**

Expert Witness at land court hearing for Morrison Construction examining noise impacts from proposed quarry.

#### **North Ayrshire Council**

Reviewing environmental noise assessments for proposed wind farms at Arran and Largs for local planning authority including in terms of ETSU-R-97 and ISO 9613.

#### **Plastics Recycling Factory**

Identification of high frequency tonal noise from plastics factory and design of abatement to eradicate noise.

#### **Post Office**

Advice on proposed housing development adjacent to sorting office to identify a potential threat to the PO operations arising from a proposed housing development next to major sorting office. The proposal included building flats within 10m of the site boundary, opposite the vehicle route through the site and overlooking the vehicle loading bay. By working with the developer, the PO and the Council helped to prevent or minimise potential long term threat to the use of the sorting office.

### **Railway Noise Public Enquiry**

Expert Witness at two planning enquiries for Cunninghame District Council examining suitability of proposed site for housing materially affected by noise from rail freight.

### **Renault Trucks**

Environmental noise assessment for proposed 12 bay drive through commercial vehicle workshop at Euro Rail terminal Mossend North Lanarkshire. The site is at the edge of a residential area with 24 hour operation. The site was designed to meet WHO day time and night-time noise standards using computer models. The design solution included silenced ventilation ducts and louvers, high specification walls and roof, fast closing doors with high acoustic performance and a 5m barrier to enable unrestricted 24 hour operation despite the proximity of sensitive receptors.

### **Scottish Coal**

Environmental noise study predicting noise from three proposed opencast sites including largest proposed site in the UK. Survey of plant and equipment and modelling of noise at 30 receptor points over 7 phases for 20 year project (Glentagart, Dalquhandy and Wilsontown).

### **Taylor Woodrow**

Railway noise assessment in Fife for proposed housing site next to Edinburgh – Aberdeen mainline. The assessment included site surveys and computer modelling using DoT approved method. The study identified low cost noise mitigation measures that enabled most of the site to be developed without restrictions.

### **Tesco's Stores**

Prediction of noise impacts and mitigation plans for three proposed stores.

### **Tynagh Power Station**

Prediction of noise from 400MW combined cycle gas turbine power station and design of acoustic elements to meet planning and EPA requirements.