





















# CRESTWOOD ENVIRONMENTAL LTD

ENVIRONMENT

ECOLOGY

MINERALS / WASTE

LANDSCAPE

HERITAGE
AIR QUALITY

NOISE

WATER

LAND QUALITY

**LIGHTING** 

TREES

**VISUALISATION** 





Crestwood Environmental Ltd. has been providing environmental expertise for over 25 years. Based on its original environmental and civil engineering knowledge applied to the minerals and waste sectors, the Company has steadily evolved into the wide-reaching multi-sector environmental consultancy business it is today.

The Company now regularly provides a range of professional expertise to numerous sectors and clients all over the British Isles, with personnel presence in various corners of the UK.

Since 2018, the business has an exciting new international dimension, having strong support from a global consultancy business who are committed to assisting Crestwood in its future evolution and to allow its expertise to be applied in increasingly wider and stronger ways.

In combination with its partners, the Company provides integrated, multidisciplinary environmental consultancy services to land developers and managers, industrial and commercial operators, local government departments and more, in safe, cost-effective and practical ways that help our clients achieve the results they need.

At Crestwood we provide survey, assessment, design, management, monitoring, analysis and communication services on a range of environmental and related aspects, as detailed further within this brochure, via technical experts in their fields supported by strong links with academia and professional institutions.

Our commitment to you, is to provide the best services possible and to keep improving. Your goal is our goal and our dedicated team will go the extra mile to achieve this.

KARL JONES
(MANAGING DIRECTOR)





# CRESTWOOD ENVIRONMENTAL LTD.

#### **About Us**

Crestwood Environmental Ltd. is a team of circa 20 talented multidisciplinary consultants providing a range of services to various private and public clients across the UK and beyond.

The Company operates from key locations in the West Midlands and the Southeast, and is supported by a number of specialist partners to allow us to provide the right practical expertise for the specific task.

Our development-related work includes environmental survey, assessment, design, planning and permitting advice, on large and small projects, for development and land-use planning purposes.

Monitoring, analysis and consultation work is also provided on construction and operational development sites, and on facilities using complex treatment processes.

The Company also operates its own analytical laboratory allowing it to undertake a range of analyses in-house, providing an efficient system of survey through to analysis and reporting.

We aim to work as an integral part of your team, providing friendly, proactive and practical interdisciplinary expertise to help you reach your development and operational goals, using SSIP audited safe working systems, and via ISO 9001 and ISO 14001 certified Quality and Environmental Management Systems.

#### Sectors and Clients:

- » Minerals and Waste
- » Residential and Mixed-Use
- » Energy
- » Industrial & Manufacturing
- » Infrastructure
- » Health and Leisure
- » Rural Economy
- » Site Developers
- » Site Operators
- » Planning Consultancies
- » Architects
- » Planning Authorities
- » Estates Managers

### Services & Key Contacts

The Company provides a range of key headline services, which are described more fully in this brochure. Your lead contact for these is provided below:



Karl Jones Managing Director

Geospatial Visualisation (P.16) Light / Lighting Consultancy (P.23)

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David Leigh Associate Director

Archaeology / Heritage (P.12)

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Adam Collinge Technical Director

Landscape (P.10)
Environmental Assessment (P.25)
Arboriculture / Forestry (P.14)
Waste & Mineral Planning

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Andrew Abbott Principal Consultant

Environmental Permitting (P.6) Geo-Environmental (P.18) Laboratory Analysis (P.19) Water / Wastewater (P.20) Air (P.24), Monitoring (P.26)

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Nick Masters Associate Director

Ecology / Biodiversity (P.8)

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Chris Turner Associate Director

Noise, Acoustics & Vibration (P.22)

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# ENVIRONMENTAL PERMITTING & WASTE

# Waste Consultancy

Crestwood Environmental started its journey by providing consultancy services to the solid waste sector, so is steeped in waste expertise.

The Company has successfully dealt with a huge range of projects working with all the statutory bodies and a variety of planning authorities across the UK.

The Company employs Chartered Wastes Managers (CIWM) and Chartered Water and Environment Managers (CIWEM) and staff with many years' of regulatory expertise relating to permitting and compliance. Working together with environmental management professionals experienced at working in the waste sector, the integrated approach and a deep understanding enables a comprehensive service to be provided.

Whatever your waste management requirements Crestwood is perfectly placed to assist you.

Waste Consultancy Services:

- » Site Layout (inc. landfill) design
- » Waste planning and EIA
- » Environmental Permitting\*
- » Hydrogeology & surface water
- » Site Condition Reports (SCRs)
- » Hydrogeological risk assessment
- » Landfill Gas Risk Assessment
- » Fire Prevention Plans (FPPs)
- » Best Available Technique appraisals
- » Waste Acceptance Procedures
- » Environmental Monitoring
- » Landfill void / settlement calculations
- » Restoration & aftercare schemes
- » Site closure plans
- » Leachate treatment consultancy
- » Expert Witness work
- » Market appraisals
- » Materials Management Plans (CL:AiRE)
- » Site Waste Management Plans

### **Environmental Permitting\***

The Company prepares all types of permit applications under the Environmental Permitting (England and Wales)
Regulations 2016 including those relating to:

- Part Al and A2 Installations (Schedule 1)
- Part B Installations (Schedule 1)
- Waste Operations (Schedule 9)
- Discharge Consent to Surface Waters
- Mining Wastes

Included industrial processes are dye manufacture, for the printing industry (incorporating metal etching, chrome and nickel plating etc.), and the ceramics industry.

Crestwood provides applied practical expertise from the initial pre-application stage, through consultations, preparation and submission of the application stages, through post-submission queries, to negotiation of final permit conditions.

We will advise on the most cost-effective approach for your business, whilst ensuring legal compliance, including Standard Rules and Bespoke permit options, as well as activities that are exempt from Environmental Permits or are classed by the Regulator as being of 'low impact'.



#### **Environmental Permits for Waste:**

- » Waste Treatment Facilities
- » Materials Recycling Facilities (MRFs)
- » Anaerobic Digestion Plants (AD)
- » Combined Heat & Power (CHP) plants
- » Composting Facilities
- » Waste Transfer Stations
- » Energy from Waste (EfW) schemes
- » End of Life Vehicles / Scrap Metal
- » Household Waste Recycling Centres
- » Waste Recovery (inert waste)
- » Landfill (hazardous / non-hazardous)







# **ECOLOGY & BIODIVERSITY**

### **Ecology Services**

Crestwood employs a variety of experienced and licensed ecological consultants trained to provide a comprehensive ecological consultancy service, with experience in working on a wide variety of habitats, protected species and development projects around the country and abroad.

Our staff understand the importance of integrating practical ecological solutions in development situations and have decades of combined ecological and conservation experience, being accomplished in providing pragmatic solutions that work for our clients and wildlife.

Work in all sectors revolves around preliminary and protected species surveys, assessment, mitigation design, licence applications, translocation, monitoring and supervision. Expertise has been applied to authoring publications such as British Standard 42020.

#### **Ecology Surveys:**

- » Extended Phase 1 Habitat Surveys
- » Plant Communities & Species (inc. NVC)
- » Hedgerow
- » Great Crested Newt (inc. HSI & eDNA)
- » Bats (inc. sonogram analysis)
- » Badger, Dormouse, Otter, Water Vole
- » Aquatic & Terrestrial Invertebrates
- » White-Clawed Crayfish
- » Reptiles
- » Birds (inc. Barn Owl)
- » Invasive Alien Species
- » River Corridor Habitat



#### **Ecology Assessment:**





- » Biodiversity Net Gain (BNG) calculation / appraisal & Biodiversity Offsetting
- Landscape & Ecology Constraints & Opportunities Plans (LECOPs)
- » Habitat Regulations Appropriate Assessments
- » BREEAM Ecology input for Eco Credits

#### Management & Mitigation:

- » Construction Environmental Management Plans (CEMPs)
- » European Protected Species (EPS) Licence applications
- » Translocation and Monitoring Schemes
- » Protected Species Method Statements
- » Development Licence applications
- » Ecology Management Plans
- » Biodiversity Action Plans
- » Green Infrastructure Plans

#### **Ecology Works:**

- » Ecological Clerk of Works (ECoW)
- » Contractor Specifications
- » Contract Administration
- » Toolbox Talks & Training
- » Contractor Supervision









# LANDSCAPE

### Landscape Architecture

The Company has provided landscape architecture services for over 12 years, and employs a number of chartered landscape architects with a range of experitise in areas of landscape and visual impact assessment (LVIA), landscape planning, landscape design (masterplanning through to detailed design), landscape management and landscape contract specification and administration.

Our landscape architects hold a huge range of experience in a variety of sectors, including minerals, waste, wind, energy, highways, residential and leisure, and at strategic planning level. Key staff are proficient to Expert Witness level and have contributed expertise for many years to Technical Committees at the Landscape Institute and the International Association for Landscape Ecology (ialeUK). The Company is also a Registered Practice of the Landscape Institute.

#### Landscape Assessment:

- » Landscape & Visual Impact (LVIAs)
- » Visibility (Viewshed) Calculations
- » Residential Visual Amenity (RVAAs)
- » Green Belt
- » Landscape Character
- » Townscape Character
- » Nightscape Character
- » Seascape Character
- » Tranquillity
- » Colour Environment



#### Landscape Design:

- » Landscape Masterplanning
- » Landscape / Planting Detailing
- » Restoration Schemes
- » Golf Course Design
- » Water-based Schemes
- » 3D Landform Design
- » Volumetric Calculations
- » Landfill Settlement Calculations

#### Landscape Management:

- » Landscape Management Plans
- » Grounds Maintenance Plans
- » Soils Management Plans
- » Conservation Habitat Plans
- » Agricultural Aftercare Plans
- » Green Infrastructure Strategies

#### Landscape Contracts:

- » Landscaping Budgets
- » Landscape Specifications
- » Contract Administration
- » Contractor Supervision
- » Quality Control Assurance

### Graphic Communication:



- » 2D, 3D, 4D Visuals
- » High quality presentation drawings
- » Verified Photomontage
- » GIS analysis
- » Augmented / Virtual Reality











# ARCHAEOLOGY & HERITAGE

### **Consultancy Services**

Crestwood Environmental provides archaeology and heritage advice for a host of developments ranging from large scale (e.g. residential, minerals or infrastructure) to small scale (e.g. private householder projects) around the UK, with international and Expert Witness level knowledge.

Whilst our work is always undertaken in accordance with best practice guidance, our extensive experience allows us to balance the commercial needs of our clients with ensuring all heritage requirements are met.

We offer a full suite of services and always guide clients through the various heritage-related consenting and legal requirements, whatever the stage of the project, from initial advice, to planning-related assessments, mitigation, investigation, recording and monitoring, and completion of required consent applications.

#### Archaeology Surveys:

- » Written Schemes of Investigation (WSI)
- » Watching Brief (controlled soil strips)
- » Geomatics
- » Geophysical Surveys
- » Aerial Surveys
- » Metal-detector Surveys
- » Field Walking Surveys
- » Trial Trench Evaluation
- » Open Area Excavation





#### Assessment & Analysis:

- » Risk Appraisal
- » Clerk of Works (Archaeological)
- » Desk-Based Assessments (DBA)
- » Heritage Management
- » Heritage Setting Assessments
- » Heritage Statements
- » Historic Character Appraisals
- » Archaeology / Heritage ES Chapters

#### Heritage Consent Applications:

- » Scheduled Monuments
- » Listed Buildings
- » Conservation Areas



- » Geoarchaeology
- » Palaeoarchaeology
- » Environmental Archaeology
- » Forensic Archaeology
- » Osteoarchaeology
- » Finds Analysis & Reporting

### Built Heritage:

- » Building Recording (Levels 1-4)
- » Scheduled Monument Consents
- » Conservation Management Plans
- » Visitor Interpretation









# ARBORICULTURE & FORESTRY

### **Arboriculture Consultancy**

Crestwood provides arboricultural consultancy expertise to a variety of clients using professional arboriculturists.

Arboricultural work for developers is undertaken primarily following the requirements of BS5837, to assist clients with design constraints and solutions.

Tree hazard risk assessments are also undertaken for landowners and managers, including local authorities, communicated in innovative 3D ways.



#### BS5837 Trees & Development Surveys:

- » Arboricultural Impact Assessments
- » Tree Constraints / Protection Plans
- » Arboricultural Method Statements
- » Arboricultural Works Supervision
- » Soil shrink / swell assessment

#### Other Tree Surveys:

- » Tree Condition Hazard Surveys
- » Visual Tree Health Inspection
- » Pests and Disease Survey
- » Veteran Tree Surveys
- » Tree Root Radar and Identification
- » Capital Asset Valuations (CAVAT)

### Applications:

- » Felling Licences
- » Tree works consents:
  - TPOs
  - Conservation Areas



# Forest & Woodland Consultancy

Forestry and woodland design, creation and management draws on multidisciplinary skills available to the Company to produce schemes which take full consideration of soil, ecology, landscape, forestry, water, heritage and other important aspects to help maximise the potential value of the land in monetary, ecosystems services and natural capital terms.

Our experience stems from designing woodland and forestry schemes, producing management plans and undertaking grant applications and EIA Screening and Scoping submissions in England, Scotland and Wales. Expertise is also held in relation to compliance with Forest Stewardship Council (FSC) certification criteria, for the UK and abroad.

#### Surveys:



- » Ancient & Other Woodland
- » Ash Dieback
- » Woodland Evaluation

#### Design and Assessment:

- » Site Suitability Assessment
- » Visualisation of forested landscapes
- » EIA Screening & Scoping submissions
- » Forestry and Woodland design
  - Community Woodland
  - Urban Forestry
  - Restoration of despoiled land
  - SRC Willow Energy Crops

#### Management and Grants:

- » Woodland creation specifications
- » Woodland Management Plans
- » Woodland Grant applications
- » Carbon Fund advice
- » Countryside Stewardship applications
- » Invasive species management advice
- » Fire Management Plans
- » Timber harvest contract supervision







# **GEOSPATIAL VISUALISATION**

#### CAD, GIS & Visualisation

Crestwood utilises a range of CAD, GIS, Visualisation, Games Engine and specialist graphics and animation software to achieve a variety of high quality outputs for a variety of uses, including design review, Environmental Impact Assessment (EIA, SEA), planning applications stakeholder interpretation and data communication.

Outputs are tailored to the viewer / requirement and may range from detailed construction engineering drawings, to large format glossy presentation images, to animated visualisations, incorporating Augmented and Virtual Reality (AR / VR), in accordance with industry guidance where required.

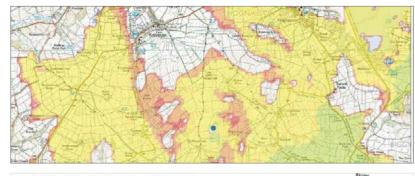
Our outputs, analyses and designs are based on accurate 3D geolocational data such that they can be interpreted in the field in real-time, or used for setting out or further analysis.

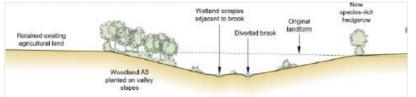
#### Plan-based Graphics:

- » Planning and Development Plans
- » Interpretative material and flyers
- » Public Consultation material

#### GIS / 3D Modelling / Analysis:

- » Design and Analysis (2D/3D/4D)
- » Visibility Assessment (ZTV, ZVI)
- » Digital terrain modelling
- » Volumetric calculations
- » Isopachyte, Slope & Elevation Analysis











#### 3D / 4D Visualisation:

- » Accurate Visual Representations:
  - Animated Construction Phasing
  - Verified Photomontages
  - Photorealistic still images
  - Artistic impressions
  - Animated fly and walk-throughs
  - Drone Videomontages

### Mixed Reality (AR and VR):

- » Augmented / Virtual Reality:
  - Accurate on-site visuals
  - Design proposals / options
  - Environmental data
  - Heritage 'reconstruction'
  - Interactive interpretation











# GEO-ENVIRONMENTAL SERVICES

### **Consultancy Services**

Crestwood employs geoenvironmental specialists to assist clients with assessing and managing ground conditions, for due diligence, planning applications, risk assessment etc. We routinely produce Phase 1 geoenvironmental / contaminated land reports (and Conceptual Site Models), detailing findings from historical datasets, site walkover surveys and identified sensitive receptors. We will also consult with relevant stakeholders and regulators.

An environmental management plan can be provided to mitigate risks, or a Phase 2 Intrusive Ground Investigation and Quantitative Risk Assessment designed and managed. All work is undertaken in accordance with best practice guidance.

The Company can also provide CQA and ground engineering consultancy support and registered Qualified Persons under CL:AIRE.

#### Survey and Assessments:

- » Phase 1 Land Quality Reports
- » Phase 2 Ground Investigation Design
- » Qualified Person support (CL:AIRE)
- » Site Condition Reports (SCRs)
- » Borehole Logging
- » Construction Quality Assurance (CQA)
- » Soakaway Infiltration Tests
- » Ground Gas Risk Assessment
- » Soil Sampling, Surveys and Analysis





# LABORATORY ANALYSIS SERVICES



# Laboratory services

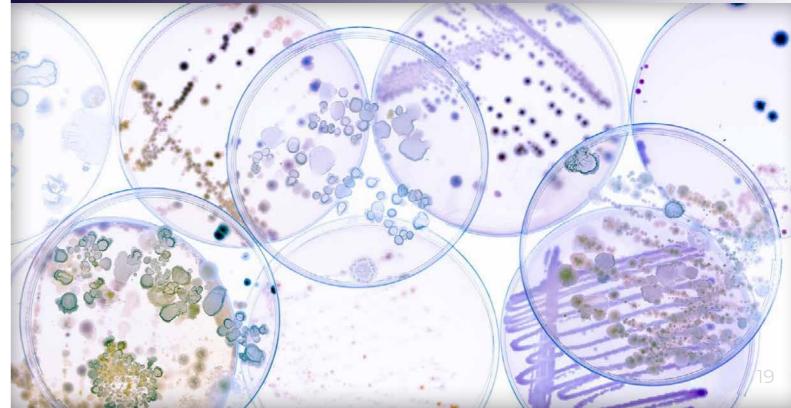
Crestwood Environmental has provided niche environmental laboratory analysis services for a number of years, developing techniques in association with local universities and continues to expand its services, through in-house capabilities (at its own laboratory in the West Midlands) and through professional associates.

Core areas of analysis services available relate to microbiological analyses, dust analysis and characterisation, eDNA (using quantitative PCR techniques), water and waste water analyses and biological treatment trial analyses.

#### Analyses:

- » Bioaerosol sample analysis:
- Total Mesophilic bacteria
  - Gram negative bacteria
  - Aspergillus fumigatus
- » Water chemical analyses
- » eDNA (great crested newt)
- » Characterisation:
  - Industrial wastewater
  - Leachate
- » Gravimetric dust analysis
- » Elemental & Chemical Analysis
- » Microscopy









# WATER & WASTEWATER CONSULTANCY

### Water Consultancy

Crestwood Environmental provides a number of expert consultancy services for water aspects, including those relating to surface water and hydrology, hydrogeology and water use / re-use.

The Company employs professionals experienced in hydrogeology, water quality / chemistry, surface water management, flood risk, drainage scheme design, ecology, soils and heritage, to provide integrated multidisciplinary input into schemes.

The Company also uses its 3D design capabilities in association with it's landscape and ecological expertise to design water features, bodies and courses using accurate real-world coordinates and levels to allow accurate calculations and construction to be undertaken.

Schemes include SuDS\* / WSUD\*, reedbed treatment design, water course diversions, wetland habitat design and surface water management plans.

#### Survey and Assessment:

- » Water Features & Systems Surveys
- » Hydrographic Surveys
- » Flood Risk Assessment (FRA)
- » Hydrogeological Impact Assessment
- » Hydrogeological Risk Assessment
- » Soakaway Testing

#### Design:

- » Sustainable Drainage Schemes\*
- » Water Sensitive Urban Design\*
- » Rain garden design
- » Water course / diversion design
- » Water body design (e.g. habitats)
- » Reedbed treatment system design

# Management Plans & Monitoring:

- » Surface water management plans
- » Diffuse pollution management plans
- » Aquatic habitat management plans
- » Groundwater monitoring
- » Discharge point monitoring



### Wastewater Consultancy

Crestwood also works across multiple sectors to assist with client companies' use and management of water and wastewater, and the related process and resource efficiency considerations.

Many industrial applications generate vast quantities of wastewater through operational processes and the Company can assist with meeting legal compliance and minimising costs via audit and rectification services.

The Company can also offer a wide range of chemical and biological analysis services to help optimise a variety of industrial processes (e.g. metal finishing) and organic wastewater processes (e.g. aerobic, anoxic or anaerobic treatment technologies). Crestwood can also assist with the design of complex treatment facilities.

#### Auditing & Analysis:

- » (Waste) water usage audits
- » (Waste) water chemical analysis
- » Wastewater re-use consultancy
- » Treatment process evaluation
- » Statutory compliance

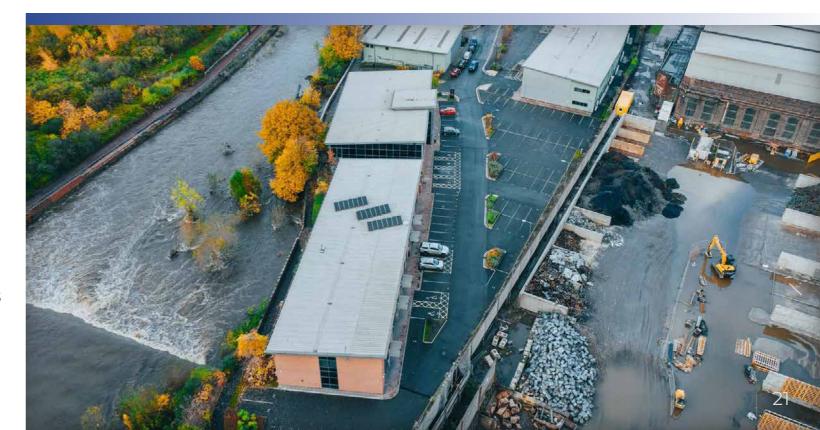
### Metal Finishing Consultancy:

- » Process improvement / rectification:
  - Oxidation, reduction & precipitation
  - Raw material removal / re-use
  - Various treatment systems

#### Organic Treatment Consultancy:

- » Leachate Treatment / bioplant system:
  - Design, Analysis & Optimisation
- » Sludge Biomass sampling & analysis
- » Odour monitoring & control









# **NOISE & ACOUSTICS**

# **Noise Consultancy**

In addition to our survey and monitoring work Crestwood Environmental can assist with a range of strategic options for assessment, management and compliance with noise standards as well as more practical monitoring, measurement and impact assessment relating to:

- Planning and EIA
- Environmental Permitting
- Licensina
- Occupational noise

Core sectors include construction, minerals, waste, manufacturing, industrial, residential and transport, around the UK, up to Expert Witness level.

Where required, we will use cost-effective digital noise modelling techniques to help predict impacts, or verify compliance levels, and allow any mitigation requirements to be identified and understood.

We can provide multi-purpose integrated solutions through interdisciplinary in-house working or provide stand-alone services, as required.

- » Noise Impact Assessments (EIA)
- » Expert Witness work
- » Section 61 Prior Consent applications
- » Entertainment Noise Assessments
- » Noise Mapping
- » Tranquillity Assessments
- » Noise Management Plans
- » Noise monitoring:
  - Baseline surveys
  - Compliance surveys
  - Noise at Work (Dosimetry)
- » Noise Risk Assessments
- » Mitigation & Control Measures





# LIGHT & LIGHTING CONSULTANCY



### Light, Lighting & Nightscapes

Crestwood Environmental employs experienced light and lighting consultants who understand how to work effectively with a variety of clients including architects, developers, planning consultants and local authorities, across a diverse range of sectors.

Our services can be provided as independent service expertise, or in conjunction with the Company's Landscape, Ecology, Heritage and Environmental Health experts for an informed, integrated, interdisciplinary approach, allowing clients' designs and strategies to be fully optimised.

Our experts include those who have written interdisciplinary guidance on the assessment of lighting and nightscapes and are at the forefront of this developing area.





- » Lighting Surveys
- » Night-time photography
- » Nightscape Character Assessments
- » Dark Skies & Astrotourism input
- » Lighting Impact Assessments
- » Ecological impacts from lighting
- » Obtrusive Light reports
- » Lighting masterplans
- » Lighting & Nightscape Strategies
- » Lighting designs:
  - Outline / Detailed
  - External / Internal
- » Visualisations & Isolux Plans
- » Mitigation strategies
- » Lighting Control
- » Daylight and Sunlight studies







# AIR QUALITY

Crestwood Environmental can cover all aspects of air quality from pre-planning, detailed design to post-planning and integrate these with other considerations such as environmental permitting and interdisciplinary assessment.

Our integrated air quality service allows us to establish baseline air quality and future effects on air quality, to specify and evaluate appropriate mitigation controls, and to measure and manage air quality to meet target requirements.

We adopt a proportional and pragmatic approach to assessment by proactively engaging in communication and consultation to ensure the scope of work comprises all the necessary elements to allow regulators to reach robust decisions. Where required, the assessment process can be undertaken in parallel with our air quality modelling and monitoring services to provide a cohesive and comprehensive assessment and solution.

Our work extends to dust, bioaerosols and odour allowing us to provide services relating to a variety of circumstances.

#### Services Overview:

- » Air Quality Screening Assessment
- » ADMS Air Dispersion Modelling
- » Chimney Height Calculations
- » Air Quality Assessment
- » Expert Witness work
- » Bioaerosol Risk Assessment
- » Odour Assessment
- » Dust Management Plans
- » Assessment of effects on habitats
- » See Environmental Monitoring also



# ENVIRONMENTAL ASSESSMENT



### Interdisciplinary working

The Company has many years of experience of dealing with complex projects with the potential to create significant environmental effects on a wide variety of aspects.

We are set-up to work with your project team on individual or the full range of aspects, and with others or ourselves leading the EIA or SEA co-ordination.

We can assist or undertake the Screening and Scoping Opinion requests, produce the technical assessments, ES chapter, accompanying figures and NTS, or provide the information you need in an efficient and well-considered way.

Our extensive minerals and waste planning and design expertise allows us to provide value-added environmental planning and design expertise to your projects, either as a critical friend or as the lead party.

Experience is held in many sectors including minerals, waste, residential, forestry, energy, commercial, industrial and highways, to Public Inquiry, LDO and Judicial Review stages.



#### Key areas of EIA / SEA:

- » Screening, Scoping, NTS, ES
- » Landscape / Visual (LVIA, RVAA, LCA)
- » Ecology (EcIA, HRA)
- » Environmental & Social (ESIA)
- » Heritage & Archaeology
- » Hydrogeology & Surface Water
- » Noise
- » Air Quality
- » Lighting
- Trees
- » Ecosystems Services / Natural Capita
- » Waste
- » Sustainability







# **ENVIRONMENTAL MONITORING**

### **Survey & Monitoring Services**

Crestwood Environmental provides a range of survey and monitoring services on sites and receptors where environmental or occupational effects may occur and be of importance.

Surveys and monitoring may relate to pre-application baseline/background data for EIA or other assessments, monitoring of compliance with planning, Permit or statutory requirements, occupational health monitoring, nuisance or to gauge performance of implemented control measures or of 'as built' or operational parameters in relation to that consented or targeted.

Sectors include construction, minerals and waste (including composting facilities) and commercial, manufacturing and industrial operations, in addition to all receptor types.

# Aerial and water borne drone surveys

for 3D surface and lake bathymetry and photographic recording also available.

#### Air / Emissions:

- » Ambient Air Quality monitoring:
  - PM 10 / PM2.5 (real time)
  - Diffusion tubes
  - VOC/PAH Sorbent tubes
- » Odour monitoring and surveys
- » Landfill Gas monitoring
- » Stack Emissions monitoring
- » LEV (Local Exhaust Ventilation) tests



#### Air / Emissions cont'd:

- » Dust & Bioaerosol monitoring:
  - Personnel (Occupational)
  - Boundary (fugitive)
  - Disamenity dust
- » Occupational Exposure surveys
- » COSHH air monitoring
- » Respiratory air quality testing

#### Lighting:

- » Baseline lighting surveys
- » Lighting nuisance surveys



#### Noise / Vibration:





» Environmental noise monitoring



# Water / Discharge / Wastewater:

- » Ground / Surface water levels
- » Water chemistry
- » Effluent monitoring
- » Leachate monitoring

#### Other:

- » Habitat / species establishment
- » Site boundary safety checks







# CRESTWOOD ENVIRONMENTAL LTD

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