Odour Assessment

Silver Street, Moldgreen

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Executive Summary

Redmore Environmental Ltd was commissioned by Colourcube Automotive to undertake an Odour Assessment in support of the change of use of Units 13 and 14, Silver Street, Moldgreen, Huddersfield, HD5 9AF, to a brand-approved accident repair centre.

Odour emissions associated with the development have the potential to cause impacts at sensitive locations in the vicinity of the site. An Odour Assessment was therefore undertaken to evaluate potential effects as a result of the proposals.

The risk of potential odour impact was assessed using a standard industry method. This involved consideration of a number of factors relating to the development including the scale and nature of the potential emission sources, the location of sensitive receptors, the prevailing meteorological conditions and the proposed control measures.

Following consideration of the relevant factors, overall effects as a result of emissions from the development were not predicted to be significant. As such, potential odour impacts are not considered to represent a constraint to the proposals.

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Appendix 1 - Curricula Vitae

1.0 INTRODUCTION

1.1 Background

1.1.1 Redmore Environmental Ltd was commissioned by Colourcube Automotive to undertake an Odour Assessment in support of the change of use of Units 13 and 14, Silver Street, Moldgreen, Huddersfield, HD5 9AF, to a brand-approved accident repair centre.

1.2 Site Location and Context

1.2.1 The proposed development is located at Units 13 and 14, Silver Street, Moldgreen, Huddersfield, HD5 9AF, at approximate National Grid Reference (NGR): 415345, 416560. Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposals comprise the change of use of Units 13 and 14 to a brand-approved accident repair centre, including the installation of two industry standard spray booths.

1.2.3 The proposed development will be operational Monday to Friday 8am to 5pm and Saturday 8am to 12pm. The spray booths will be operational for less than 50% of the centre opening hours.

1.2.4 The building structure wall is double skin galvanised sheet panels. Two double skin insulated self-closing personnel escape doors will be provided, one exiting the paint mixing area, the second the gun wash. The doors will incorporate compression seals, a self-closing device and glazing.

1.2.5 The spray booths will be used for vehicle refinishing works. They will incorporate high-efficiency filtration and extraction systems including multi-paint arrestor filters to treat emissions prior to discharge. Paint spraying will occur within the spray booths only and not within the main workshop.

1.2.6 The stacks associated with the spray booths will discharge on the eastern side of the building at heights of 2.00m and 2.40m above the ridge, respectively. Air will be discharged vertically at a minimum efflux velocity of 15m/s to ensure a suitable level of dispersion. Reference should be made to Figure 2 for the proposed spray booth layout and location of the exhausts.

1.2.7 The centre will use only brand approved water based paints. Paint products will be stored in an enclosed paint mixing room/ gun wash room which will be located within the existing workshop.

1.2.8 All equipment associated with the proposed development will be serviced/ calibrated in line with the necessary service plans. This varies between every 3-months/ 6-months/ annually depending on the piece of equipment.

1.2.9 A planning application (ref: 2025/62/93343/W) has been submitted to Kirklees Council (KC) for the development. Subsequent comments have been provided by KC, which include the following in relation to odour:

> "In order to properly assess the application, you will need to submit the following details:
>
> An Odour Impact Assessments shall be prepared by a suitably competent person, as defined in Annex 2 of the National Planning Policy Framework 2023. Reports must be prepared in accordance with 'Detailed advice is available in "Guidance on the assessment of odour for planning" by the Institute of Air Quality Management (IAQM) version 1.1 July 2018' guidance."

1.2.10 An Odour Assessment was undertaken to address the above comment to address the above comment. This is provided in the following report.

2.0 ODOUR BACKGROUND

2.1 Odour Definition

2.1.1 The Institute of Air Quality Management (IAQM) guidance[1] defines odour as:

> "[…] the human olfactory response (perception followed by psychological appraisal) to one, or more often a complex mixture of, chemical species in the air."

2.1.2 The stated definition is considered to be relevant in the context of this assessment.

2.2 Odour Impacts

2.2.1 The magnitude of odour impact depends on a number of factors and the potential for complaints varies due to the subjective nature of odour perception. The **FIDOL** acronym, is a useful reminder of the factors that will determine the degree of odour pollution. These are described by the IAQM[2] as follows:

- **F**requency - how often an individual is exposed to odour;
- **I**ntensity - the individual's perception of the strength of the odour;
- **D**uration - The overall duration that individuals are exposed to an odour over time;
- **O**dour unpleasantness - Odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone' (which may be pleasant, neutral or unpleasant) at a given odour concentration/ intensity. This can be measured in the laboratory as the hedonic tone, and when measured by the standard method and expressed on a standard nine-point scale it is termed the hedonic score; and,
- **L**ocation - The type of land use and nature of human activities in the vicinity of an odour source. Tolerance and expectation of the receptor. The 'Location' factor can be considered to encompass the receptor characteristics, receptor sensitivity, and socio-economic factors.

[1] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

[2] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

2.2.2 It is important to note that even infrequent emissions may cause loss of amenity if odours are perceived to be particularly intense or offensive.

2.2.3 The **FIDOL** factors can be considered further to provide the following issues in regard to the potential for an odour emission to cause a nuisance:

- The rate of emission of the compound(s);
- The duration and frequency of emissions;
- The time of the day that this emission occurs;
- The prevailing meteorology;
- The sensitivity of receptors to the emission i.e. whether the odorous compound is more likely to cause nuisance, such as the sick or elderly, who may be more sensitive;
- The odour detection capacity of individuals to the various compound(s); and,
- The individual perception of the odour (i.e. whether the odour is regarded as unpleasant). This is greatly subjective and may vary significantly from individual to individual. For example, some individuals may consider some odours as pleasant, such as petrol, paint and creosote.

2.3 Odour Legislative Control

2.3.1 The main requirement with respect to odour control from premises not controlled under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

> "Any dust, steam, odour or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."

2.3.2 Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the Local Authority is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

2.3.3 The legislative controls described above were considered as necessary throughout the undertaking of this assessment.

2.4 National Planning Policy

2.4.1 The revised National Planning Policy Framework[3] (NPPF) was published in December 2024 and amended in February 2025. The document sets out the Government's planning policies for England and how these are expected to be applied.

2.4.2 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives including the following of relevance to odour:

> "c) An environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

2.4.3 Chapter 12 of the NPPF details objectives in relation to achieving well-designed place. It states that:

> "Planning policies and decisions should ensure that developments
>
> f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesions and resilience."

2.4.4 The implications of the NPPF have been considered throughout this assessment.

[3] NPPF, Ministry of Housing, Communities and Local Government, 2024.

2.5 Local Planning Policy

2.5.1 The Kirklees Local Plan[4] was adopted by KC in February 2019. Review of the document identified the following policies of relevance to this report:

> "Policy LP52
>
> Protection and improvement of environmental quality
>
> Proposals which have the potential to increase pollution from noise, vibration, light, dust, odour, shadow flicker, chemicals and other forms of pollution or to increase pollution to soil or where environmentally sensitive development would be subject to significant levels of pollution, must be accompanied by evidence to show that the impacts have been evaluated and measures have been incorporated to prevent or reduce the pollution, so as to ensure it does not reduce the quality of life and well-being of people to an unacceptable level or have unacceptable impacts on the environment.
>
> Such developments which cannot incorporate suitable and sustainable mitigation measures which reduce pollution levels to an acceptable level to protect the quality of life and well-being of people or protect the environment will not be permitted.
>
> Where possible, all new development should improve the existing environment."

2.5.2 The above policy was taken into consideration throughout the undertaking of this assessment.

2.6 Institute of Air Quality Management Guidance

2.6.1 The IAQM published the 'Guidance on the Assessment of Odour for Planning'[5] document on 20th May 2014. This was updated in 2018[6] and specifically deals with assessing odour

4 Kirklees Local Plan, KC, 2019.

5 Guidance on the Assessment of Odour for Planning, IAQM, 2014.

6 Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

impacts for planning purposes, namely potential effects on amenity. The assessment methodology outlined in the guidance has been utilised in throughout this report where relevant.

3.0 METHODOLOGY

3.1 Introduction

3.1.1 Odour emissions associated with the proposals may have the potential to cause impacts at sensitive locations in the vicinity of the site. The potential risk of adverse effects has therefore been assessed using the IAQM 'Guidance on the Assessment of Odour for Planning v1.1'[7] document. The relevant methodology is summarised in the following Sections.

3.2 Background

3.2.1 The basic concept of risk assessment is that the overall risk depends on the probability of an event occurring together with the likely consequences if it was to occur. For odour assessments the probability can be considered as the likelihood of exposure (impact), and the consequence can be considered to be the effect on the receptor if that exposure (impact) took place. These two facets can be summarised by the source-pathway-receptor concept.

3.2.2 Behind the source-pathway-receptor concept, is the fundamental relationship:

Effect ≈ Dose x Response

3.2.3 In the specific case of odour assessments, the dose can be considered equivalent to the odour exposure, or impact. This will be determined by **FIDO** of the **FIDOL** factors. The effect is the result of the changes on specific receptors (people in the case of odour) taking into account their sensitivities (i.e. responsiveness to odour), the L (location) in **FIDOL** is to categorise the sensitivity.

3.2.4 The IAQM guidance states that a qualitative risk-based approach is appropriate for:

- Screening of odour impacts;
- Development proposals likely to have a low risk of adverse effects;

[7] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

- Situations where there is insufficient information to carry out detailed predictive dispersion modelling;
- Situations where the information has wide uncertainties and its use as input to a detailed predictive dispersion model would be at best a waste of time, money and effort or, worse, would lead to an illusory and false impression of accuracy and precision in the numbers generated; and,
- When the model is not able to properly represent the reality of the situation being assessed, e.g. if the odour effects are likely to be significantly influenced by accidental, unexpected, or unknown releases. In such instances a qualitative estimate may be more appropriate, on the basis that it is better to be broadly correct than precisely wrong.

3.2.5 It is considered that all of these criteria are met for this project. As such, a qualitative assessment methodology was deemed appropriate.

3.3 Risk Assessment Procedure

3.3.1 The first step in the assessment was to estimate the odour generating potential of the site activities. This is termed the Source Odour Potential, which takes into account three factors:

- The scale (magnitude) of the release from the odour source, taking into account the effectiveness of any odour control or mitigation measures that are already in place. This involves judging the relative size of the release rate after mitigation and taking account of any pattern of release (e.g. intermittency);
- How inherently odorous the emission is. In some cases it may be known whether the release has a low, medium or high Odour Detection Threshold (ODT). This is the concentration at which an odour becomes detectable to the human nose. In most instances the odours released by a source will be a complex mixture of compounds and the detectability will not be known. However, for some industrial processes the odour will be due to one or a small number of known compounds and the detection thresholds will be a good indication of whether the release is highly odorous or mildly odorous; and,
- The relative pleasantness/ unpleasantness of the odour.

3.3.2 Using the example risk ranking in Table 1, the Source Odour Potential was categorised as **small**, **medium** or **large**.

Table 1 Source Odour Potential

Source Odour Potential	Comments
Large	**Magnitude** - Larger Environmentally Permitted processes of odorous nature or large Sewage Treatment Works (STWs); materials usage hundreds of thousands of tonnes/m^3 per year; area sources of thousands of m^2. The compounds involved are very odorous (e.g. mercaptans), having very low ODTs where known **Unpleasantness** - processes classed as "Most offensive" in Environment Agency (EA) Guidance H4[8]; or (where known) compounds/odours having unpleasant (-2) to very unpleasant (-4) hedonic score **Mitigation/control** - open air operation with no containment, reliance solely on good management techniques and best practice
Medium	**Magnitude** - Smaller Environmentally Permitted processes or small STWs; materials usage thousands of tonnes/m^3 per year; area sources of hundreds of m^2. The compounds involved are moderately odorous **Unpleasantness** - processes classed in EA Guidance H4[9] as "Moderately offensive"; or (where known) odours having neutral (0) to unpleasant (-2) hedonic score **Mitigation/control** - some mitigation measures in place, but significant residual odour remains
Small	**Magnitude** - Falls below Environmental Permit Part B threshold; materials usage hundreds of tonnes/m^3 per year; area sources of tens m^2. The compounds involved are only mildly odorous, having relatively high ODTs where known **Unpleasantness** - processes classed as "Less offensive" in EA Guidance H4[10]; or (where known) compounds/odours having neutral (0) to very pleasant (+4) hedonic score **Mitigation/control** - effective, tangible mitigation measures in place leading to little or no residual odour

3.3.3 The next step was to estimate the effectiveness of the pollutant pathway as the transport mechanism for odour through the air to the receptor, versus the dilution/ dispersion in the atmosphere. Any factor that increases dilution and dispersion of the plume as it travels from source to receptor will reduce the concentration at the end point, and hence reduce exposure. Important factors for consideration are:

8 H4: Odour Management, EA, 2011.

9 H4: Odour Management, EA, 2011.

10 H4: Odour Management, EA, 2011.

- The distance between sensitive receptors and the odour source;
- Whether receptors are downwind with respect to the prevailing wind direction. Odour episodes often tend to occur during stable atmospheric conditions with low wind speed, which gives poor dispersion and dilution. Receptors close to the source in all directions can be affected under these conditions. When circumstances are not calm, it will be the downwind receptors that are affected. As such, receptors that are downwind with respect to the prevailing wind direction tend to be at higher risk of odour impact;
- The effectiveness of the point of release in promoting good dispersion e.g. releasing emissions from a high stack will increase the pathway, dilution and dispersion; and,
- The topography and terrain between the source and receptor. The presence of topographical features such as hills and valleys, or urban terrain features such as buildings, can affect air flow and therefore increase, or inhibit, dispersion and dilution.

3.3.4 Using the example risk ranking in Table 2, the pollutant pathway from source to receptor was categorised as **ineffective**, **moderately effective** or **highly effective**.

Table 2 Pathway Effectiveness

Pathway Effectiveness	Comments
Highly effective	**Distance** - receptor is adjacent to the source/ site; distance well below any official set-back distances **Direction** - high frequency of winds from source to receptor, or, qualitatively, receptors downwind of source with respect to prevailing wind **Effectiveness of dispersion/dilution** - open processes with low-level releases, e.g. lagoons, uncovered effluent treatment plant, landfilling of putrescible wastes
Moderately effective	**Distance** - receptor is local to the source **Where mitigation relies on dispersion/dilution** - releases are elevated, but compromised by building effects
Ineffective	**Distance** - receptor is remote from the source; distance exceeds any official set-back distances **Direction** - low frequency of winds from source to receptor, or, qualitatively, receptors upwind of source with respect to prevailing wind **Where mitigation relies on dispersion/dilution** - releases are from high level (e.g. stacks, or roof vents greater than 3m above ridge height) and are not compromised by surrounding buildings

3.3.5 The sensitivity of the receiving receptor was defined based on the criteria shown in Table 3.

Table 3 Odour Receptor Sensitivity

Sensitivity	Description
High	Surrounding land where: • Users can reasonably expect enjoyment of a high level of amenity; and, • People would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land Examples may include residential dwellings, hospitals, schools/ education and tourist/ cultural
Medium	Surrounding land where: • Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or, • People would not reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land Examples may include places of work, commercial/ retail premises and playing/ recreation fields
Low	Surrounding land where: • The enjoyment of amenity would not reasonably be expected; or, • There is transient exposure, where the people would reasonably be expected to present only for limited periods of time as part of the normal pattern of use of the land Examples may include industrial use, farms, footpaths and roads

3.3.6 The estimates of Source Odour Potential and Pathway Effectiveness were considered together to predict the risk of odour exposure (impact) at the receptor location, as shown by the matrix in Table 4.

Table 4 Risk of Odour Exposure

Pathway Effectiveness	Source Odour Potential		
	Small	Medium	Large
Highly effective	Low	Medium	High
Moderately effective	Negligible	Low	Medium
Ineffective	Negligible	Negligible	Low

3.3.7 The final step was to determine the significance of odour effect at the specified receptor location through the interaction between sensitivity and risk, as outlined in Table 5.

Table 5 Significance of Odour Effect

Risk of Odour Exposure	Receptor Sensitivity		
	Low	Medium	High
High	Slight	Moderate	Substantial
Medium	Negligible	Slight	Moderate
Low	Negligible	Negligible	Slight
Negligible	Negligible	Negligible	Negligible

3.3.8 The IAQM guidance[11] states that an assessment must reach a conclusion on the likely significance of the predicted impact. Where the overall effect is **moderate** or **substantial**, the effect is likely to be considered **significant**, whilst if the effect is **slight** or **negligible**, the impact is likely to be considered **not significant**. It should be noted that this is a binary judgement of either it is **significant** or it is **not significant**. This has been considered to determine the overall significance of potential odour effects associated with the development.

3.3.9 The IAQM guidance recognises that assessment of odour requires some degree of professional judgement[12]. Qualitative methodologies such as those utilised within this report provide guidance for assessing potential impacts. However, professional judgement should be exercised in order to take account of the specific details which are unique to each development. This has been considered as necessary throughout the assessment. The IAQM also suggest that the assessor's qualifications and experience are detailed within an Odour Assessment. These are provided in Appendix 1.

[11] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

[12] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

4.0 BASELINE

4.1 Introduction

4.1.1 Existing conditions at the proposed development were identified in order to provide a baseline for the assessment. These are detailed in the following Sections.

4.2 Site Description

4.2.1 The proposed development is located on land at Units 13 and 14, Silver Street, Moldgreen. The site is bordered to the north, west and south by industrial units all located off Silver Street. To the east is woodland, beyond which is Kilner Bank nature reserve.

4.2.2 The nearest residential properties are located approximately 90m west of the site off Church Lane. There are also residential dwellings off Ivy Street, approximately 130m south of the site.

4.3 Sensitive Receptors

4.3.1 A desk-top study was undertaken order to identify the closest sensitive locations in the vicinity of the site that required specific consideration during the assessment. These are summarised in Table 6.

Table 6 Sensitive Receptors

Receptor		NGR (m)		Sensitivity	Distance from Site (m)
		X	Y		
R1	Residential - Ivy Street	415279.7	416423.1	High	130
R2	Residential - Church Lane	415478.7	416588.7	High	90
R3	Residential - Ivy Street	415220.4	416439.0	High	160
R4	Residential - Hampshire Street	415501.8	416541.3	High	105
R5	Industrial - J.T.Ellis	415355.9	416611.5	Low	45
R6	Industrial - Gate 3 Shaw Park	415370.1	416508.7	Low	30
R7	Industrial - J.T.Ellis	415258.6	416565.8	Low	85

Receptor		NGR (m)		Sensitivity	Distance from Site (m)
		X	Y		
R8	Industrial - Shaw Park Unit	415326.8	416451.4	Low	95

4.3.2 Reference should be made to Figure 3 for a map of the identified sensitive receptor locations.

4.4 Meteorological Conditions

4.4.1 The potential for atmospheric emissions to impact at sensitive locations depends significantly on the meteorology, particularly wind direction, during release. In order to consider prevailing conditions at the site, review of historical weather data was undertaken. Meteorological data used in the assessment was obtained from Bingley Meteorological Station at NGR: 408874, 435015, which is approximately 19.2km north of the site boundary. It is considered that conditions are likely to be reasonably similar over a distance of this magnitude and the information is a suitable source of data for an assessment of this nature.

4.4.2 Meteorological data was obtained from Bingley Meteorological Station over the period 1st January 2020 to 31st December 2024 (inclusive). This is summarised in Table 7. Reference should be made to Figure 4 for a wind rose of the meteorological data.

Table 7 Wind Frequency Data

Wind Direction (°)	Frequency of Wind (%)
345 - 15	3.01
15 - 45	4.58
45 - 75	6.11
75 - 105	5.56
105 - 135	6.50
135 - 165	4.44
165 - 195	5.79
195 - 225	15.92

Wind Direction (°)	Frequency of Wind (%)
225 - 255	12.51
255 - 285	19.54
285 - 315	8.96
315 - 345	3.01
Sub-Total	95.94
Calms	2.95
Missing/Incomplete	1.12

4.4.3 As shown in Table 7, the prevailing wind direction at the site is from the west and south-west. Winds from the north and east are relatively infrequent, which is indicative of conditions throughout the majority of the UK.

4.4.4 All meteorological data used in the assessment was provided by Atmospheric Dispersion Modelling Ltd, which is an established distributor of meteorological data within the UK.

5.0 ASSESSMENT

5.1.1 The development has the potential to cause odour impacts at sensitive locations in the vicinity of the site. The risk of potential adverse effect was therefore assessed in accordance with the previously stated IAQM methodology[13].

5.1.2 The first step was to classify the Source Odour Potential. This was categorised as **small** for the following reasons:

- Odours associated with paint spraying activities are likely to be classified as 'moderately offensive' in accordance with EA Guidance H4[14];
- Activities associated with the proposed development will take place within an enclosed building. The building structure has been designed to provide containment of emissions associated with internal processes;
- The spray booths incorporate high-efficiency filtration and extraction systems including multi-paint arrestor filters to treat emissions prior to discharge. Paint spraying will occur within the spray booths only and not within the main workshop;
- The spray booths are served by dedicated flues that terminate above the ridge of the building in order to promote effective dispersion of odours. Air will be discharged vertically at a minimum efflux velocity of 15m/s; and,
- With the exception of dry and clean recyclables, all waste materials will be stored within enclosed plant and buildings prior to removal from the centre by a specialist waste solutions company. As such, they will not be exposed directly to atmosphere.

5.1.3 The Pathway Effectiveness was subsequently defined based on the separation distance between the source and the sensitive receptor locations, the prevailing meteorological conditions and the emission dispersion arrangements. This is summarised in Table 8. It should be noted that in all cases the elevated dispersion arrangements were considered as relevant. These are not repeated in Table 8 for reasons of brevity.

[13] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

[14] H4: Odour Management, EA, 2011.

Table 8 Pathway Effectiveness

Receptor		Pathway Effectiveness	Justification
R1	Residential - Ivy Street	Moderately effective	Receptor is local to the source, approximately 130m to the south-west Receptor is predominantly upwind of the source with respect to prevailing meteorological conditions
R2	Residential - Church Lane	Moderately effective	Receptor is local to the source, approximately 90m to the north-east Receptor is predominantly downwind of the source with respect to prevailing meteorological conditions
R3	Residential - Ivy Street	Moderately Effective	Receptor is local to the source, approximately 160m to the south-west Receptor is predominantly upwind of the source with respect to prevailing meteorological conditions
R4	Residential - Hampshire Street	Moderately effective	Receptor is local to the source, approximately 105m to the east Receptor is predominantly downwind of the source with respect to prevailing meteorological conditions
R5	Industrial - J.T.Ellis	Moderately effective	Receptor is local to the source, approximately 45m to the north Receptor is predominantly downwind of the source with respect to prevailing meteorological conditions
R6	Industrial - Gate 3 Shaw Park	Moderately effective	Receptor is local to the source, approximately 30m to the south Receptor is predominantly upwind of the source with respect to prevailing meteorological conditions
R7	Industrial - J.T.Ellis	Moderately effective	Receptor is local to the source, approximately 85m to the west Receptor is predominantly upwind of the source with respect to prevailing meteorological conditions
R8	Industrial - Shaw Park Unit	Moderately effective	Receptor is local to the source, approximately 95m to the south Receptor is predominantly upwind of the source with respect to prevailing meteorological conditions

5.1.4 The above information has been used with the land use sensitivity identified within Table 6 to assess odour risk and effect significance as a result of the proposed development. This is summarised in Table 9.

Table 9 Odour Risk Assessment

Receptor	Source Odour Potential	Pathway Effectiveness	Exposure Risk	Sensitivity	Effect Significance
R1	Small	Moderately effective	Negligible	High	Negligible
R2	Small	Moderately effective	Negligible	High	Negligible
R3	Small	Moderately effective	Negligible	High	Negligible
R4	Small	Moderately effective	Negligible	High	Negligible
R5	Small	Moderately effective	Negligible	Low	Negligible
R6	Small	Moderately effective	Negligible	Low	Negligible
R7	Small	Moderately effective	Negligible	Low	Negligible
R8	Small	Moderately effective	Negligible	Low	Negligible

5.1.5 As shown in Table 9, the predicted odour effect significance was **negligible** at all receptors as a result of emissions from the proposed development.

5.1.6 The IAQM guidance states that only if the impact is **moderate** or **substantial**, the effect is considered **significant**. As such, potential impacts as a result of emissions from the proposals are considered to be **not significant**, in accordance with the stated methodology.

6.0 CONCLUSION

6.1.1 Redmore Environmental Ltd was commissioned by Colourcube Automotive to undertake an Odour Assessment in support of the change of use of Units 13 and 14, Silver Street, Moldgreen, Huddersfield, HD5 9AF, to a brand-approved accident repair centre.

6.1.2 Odour emissions associated with the development may have the potential to cause impacts at sensitive locations in the vicinity of the site. An Odour Assessment was therefore undertaken to evaluate potential effects as a result of the scheme.

6.1.3 The risk of potential odour effects as a result of the development was assessed using the IAQM methodology. This included consideration of the Source Odour Potential, Pathway Effectiveness and receptor sensitivity. The results of the assessment indicated the predicted odour effect significance was **negligible** at all locations as a result of emissions from the scheme.

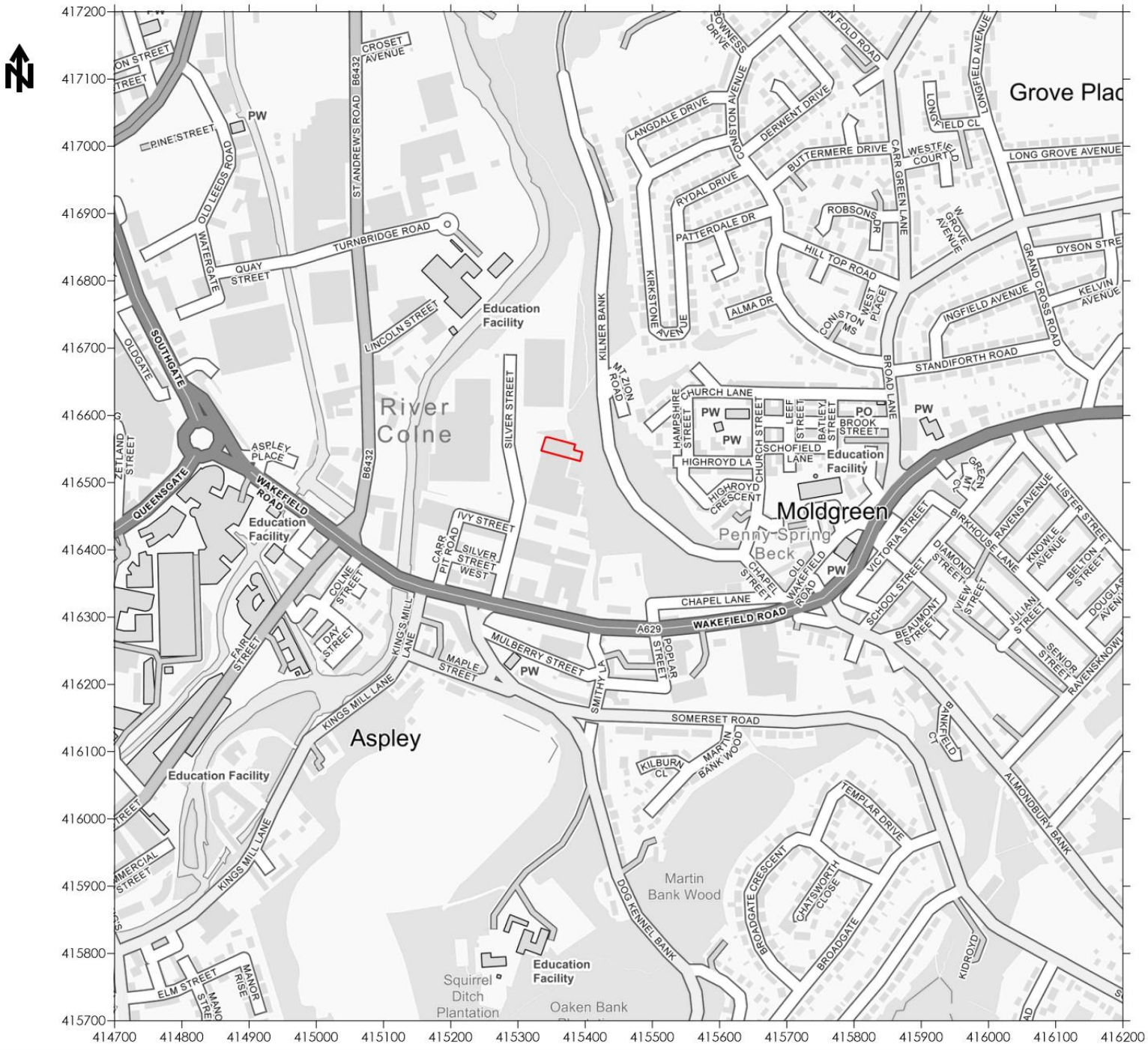
6.1.4 The IAQM guidance[15] states that only if the impact is **moderate** or **substantial**, the effect is considered **significant**. As such, based on the assessment results, potential odour effects as a result of emissions from the proposals are considered to be **not significant**. Odour is therefore not considered to represent a constraint to planning consent for the scheme.

15 Guidance on the Assessment of Odour for Planning, v1.1, IAQM, 2018.

7.0 ABBREVIATIONS

EA	Environment Agency
IAQM	Institute of Air Quality Management
KC	Kirklees Council
NGR	National Grid Reference
NPPF	National Planning Policy Framework
ODT	Odour Detection Threshold
STW	Sewage Treatment Works

Figures



Legend

Site Boundary

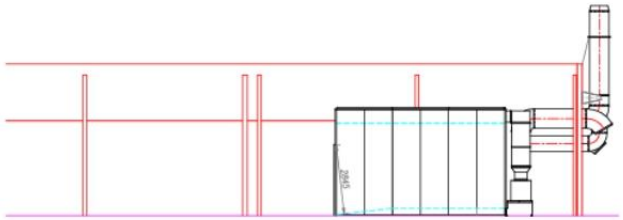
Title
Figure 1 - Site Location

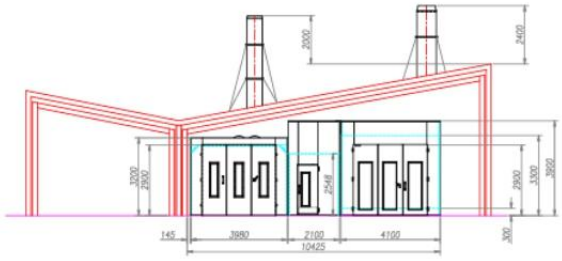
Project
Odour Assessment
Silver Street, Moldgreen

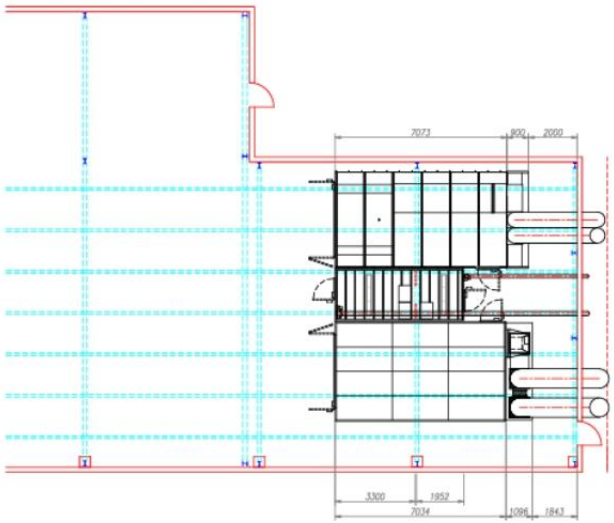
Project Reference
10854

Client
Colourcube Automotive

Redmore environmental
www.red-env.co.uk | 0161 7060075







Legend

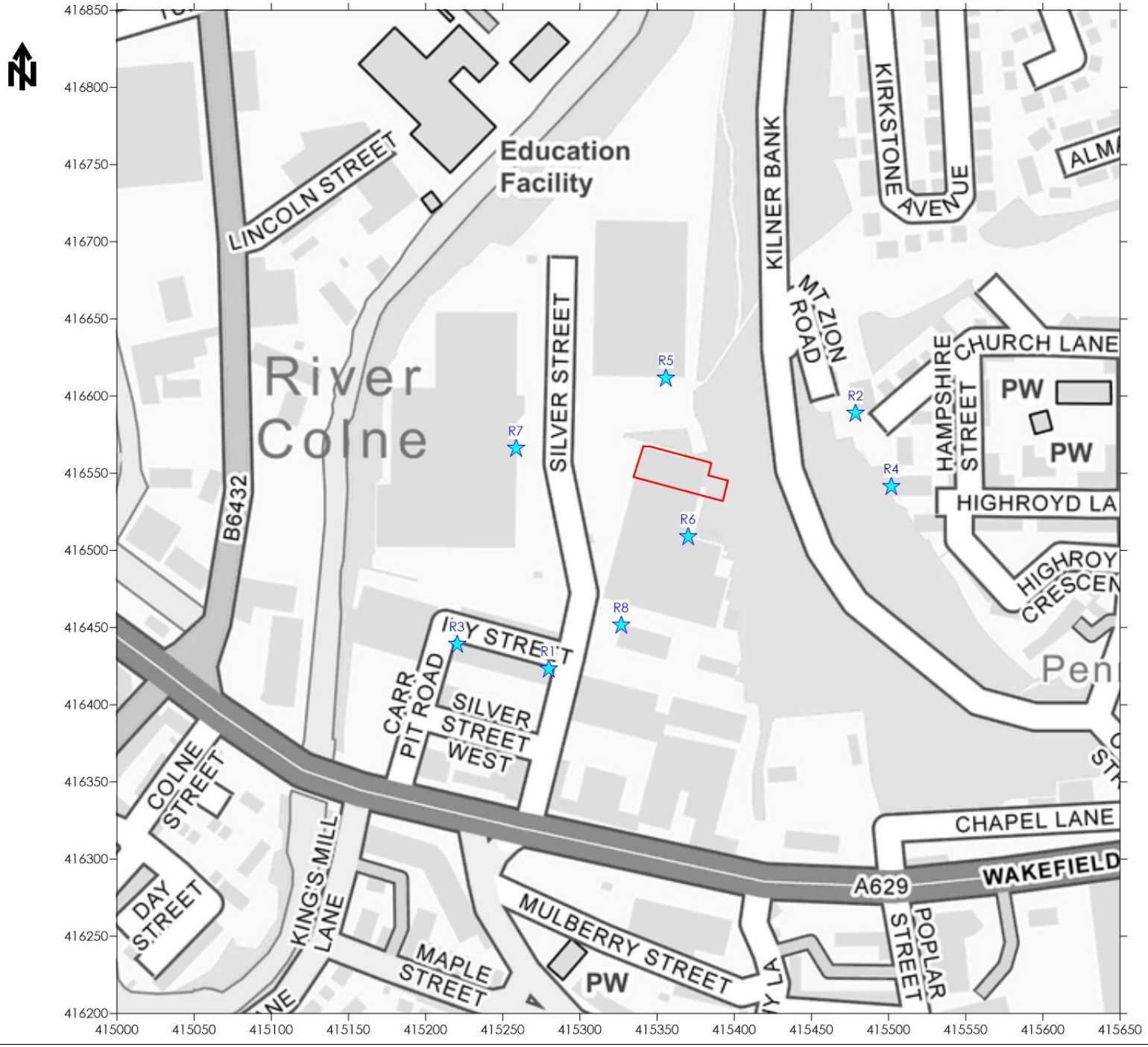
Title
Figure 2 - Proposed Layout and Location of Exhausts

Project
Odour Assessment
Silver Street, Moldgreen

Project Reference
10854

Client
Colourcube Automotive

Redmore environmental
www.red-env.co.uk | 0161 7060075



Legend

Site Boundary

Receptor

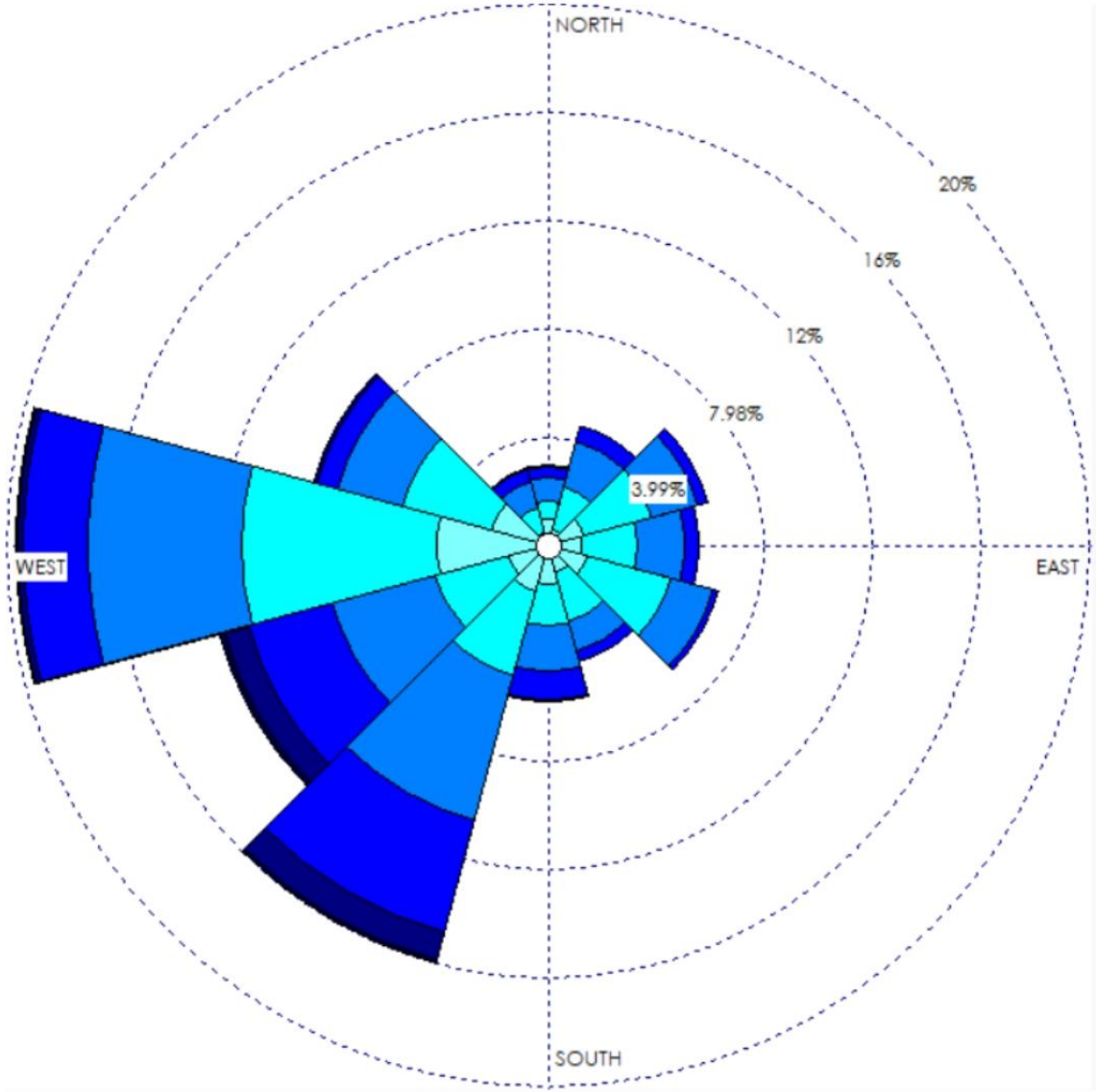
Title
Figure 3 - Sensitive Receptor Locations

Project
Odour Assessment
Silver Street, Moldgreen

Project Reference
10854

Client
Colourcube Automotive

Redmore environmental
www.red-env.co.uk | 0161 7060075



Legend

WIND SPEED (m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 2.95%

Title
Figure 4 - Wind Rose of 2020 - 2024
Bingley Meteorological Data

Project
Odour Assessment
Silver Street, Moldgreen

Project Reference
10854

Client
Colourcube Automotive

Redmore environmental
www.red-env.co.uk | 0161 7060075

Appendix 1 - Curricula Vitae

JETHRO REDMORE

Director

BEng (Hons), MSc, MIAQM, MIEnvSc, PISEP, CEnv

KEY EXPERIENCE:

Jethro is a Chartered Environmentalist and Director of Redmore Environmental with specialist experience in the air quality and odour sectors. His key capabilities include:

- Production and management of Air Quality, Dust and Odour Assessments for a wide-range of clients from the retail, residential, infrastructure, commercial and industrial sectors.
- Production and co-ordination of Environmental Permit applications for a variety of industrial sectors.
- Detailed dispersion modelling of road vehicle and industrial emissions using ADMS-Roads, ADMS-6, AERMOD-PRIME and BREEZE-ROADS. Studies have included impact assessment of ground level pollutant and odour concentrations and assessment of suitability of development sites for proposed end-use.
- Project management and co-ordination of Environmental Impact Assessments and scoping reports for developments throughout the UK.
- Provision of expert witness services at Planning Inquiries.
- Design and project management of pollutant monitoring campaigns.
- Co-ordination and management of large-scale multi-disciplinary projects and submissions.
- Provision of expert advice to local government and international environmental bodies, as well as involvement in production of industry guidance.

SELECT PROJECTS SUMMARY:

Industrial

Shanks Waste Management - Odour Assessments of two waste management facilities to support Environmental Permit Applications.

Tatweer Petroleum - dispersion modelling of Bahrain oil field.

Doha South Sewage Treatment Works - AQA for works extension in Qatar.

IRIS Environmental Appraisal Report Reviews, Isle of Man Government - odour assessment reviews.

Lankem, Greater Manchester - Environmental Permit Application for chemical manufacturing plant.

Newport Docks Bulk Drying, Pelleting and CHP Facility - air quality EIA for gas CHP.

Springshades, Leicester - Environmental Permit Variation Application for textile manufacturing plant.

Valspar, Chester - Odour Assessment and production of Odour Management Plan for a paint manufacturing plant in response to neighbour complaints.

Agrivert - dispersion modelling of odour and CHP emissions from numerous AD plants.

James Cropper Paper Mill, Cumbria - air quality EIA, Environmental Permit Variation and Human Health Risk Assessment for new biomass boiler adjacent to SSSI.

Rigg Approach, Leyton - Air Quality Assessment in support of waste transfer site.

Lynchford Lane Waste Transfer Station - biomass facility energy recovery plant.

Barnes Wallis Heat and Power, Cobham - biomass facility adjacent to AQMA.

Residential

Wood St Mill, Bury - residential development adjacent to scrap metal yard.

Hyams Lane, Holbrook - Odour Assessment to support residential development adjacent to sewage works.

North Wharf Gardens, London - peer review of EIA undertaken for large residential development.

Loxford Road, Alford - Air Quality EIA for residential development, included consideration of impacts from associated package sewage works

Elephant and Castle Leisure Centre - baseline AQA for redevelopment.

Carr Lodge, Doncaster - EIA for large residential development.

Queensland Road, Highbury - residential scheme including CHP.

Bicester Ecotown - dispersion modelling of energy centre.

Castleford Growth Delivery Plan - baseline air quality constraints assessment for town redevelopment.

York St, Bury - residential development adjacent to AQMA.

Temple Point Leeds - residential development adjacent to M1.

Commercial and Retail

Etihad Stadium - Air Quality EIA for the extension to the capacity of the Etihad Stadium, Manchester.

Wakefield College - redevelopment of city centre campus in AQMA.

Manchester Airport Cargo Shed - commercial development.

Manchester Airport Apron Extension - EIA including aircraft emission modelling.

National Youth Theatre, Islington - redevelopment to provide new arts space and accommodation.

CERI HAINES

Senior Air Quality Consultant

BSc (Hons), MSc, AMIEnvSc

Tel: 0161 706 0075 | Email: ceri.haines@red-env.co.uk

KEY EXPERIENCE:

Ceri is a Senior Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included assessment of road traffic exhaust emissions on sensitive receptors and exposure of new residents to poor air quality.
- Advanced Canyon Modelling to evaluate the impact of altered urban topography on air quality in built up areas.
- Assessment of construction dust impacts from a range of development sizes.
- Definition of baseline air quality and identification of sensitive areas across the UK.
- Odour surveys to assess amenity and suitability of sites for potential future development for residential use.

SELECT PROJECTS SUMMARY:

Warren Street, Stockport

Air Quality Assessment in support of a residential-led development comprising 553 apartments and two commercial units located in an Air Quality Management Area (AQMA). The development had the potential to expose future occupants to poor air quality and cause impacts at sensitive locations. Detailed dispersion modelling and a construction dust assessment indicated air quality factors were not a constraint to the development.

Belgrave Gate, Leicester

Air Quality Assessment in support of the conversion of an existing building to provide three residential units on Belgrave Gate, Leicester. The scheme was located in an AQMA, alongside a bus station. As such, the development had potential to expose future residents to elevated pollution levels and adverse air quality effects. Results of detailed dispersion modelling utilising advanced canyons and a volume source to represent the bus station indicated air quality issues were not a constraint to planning consent for the development.

Kings Arms Hotel, Stansted

Odour Assessment in support of a Discharge of Condition application for a consented development on land to the rear of the Kings Arms Hotel, Stansted. The site was located in close proximity to several fast food restaurants which have the potential to cause odour emissions during normal operation. A mitigation scheme was therefore identified to protect future residents from loss of amenity. Subject to the inclusion of the specified mitigation, overall effects of odour were considered to be not significant at the development.

Manchester Road West, Little Hulton

Odour Assessment in support of construction of 152 residences on land off Manchester Road West, Little Hulton. The development was located in the vicinity of several waste management facilities which may form a source of odour emissions and cause loss of amenity for future residents. A two stage Odour Assessment was undertaken to assess baseline conditions across the site and consider the risk of reduced amenity. Results of the assessment indicated odour effects at the site did not represent a constraint to planning consent.

Gravel Pit Farm, Sand Hutton

Odour Assessment in support of the conversion of existing buildings into two residential dwellings on land at Gravel Pit Farm, Sand Hutton. The development was located in the vicinity of the Sand Hutton Anaerobic Digestion Plant, which may form a source of odour emissions and cause loss of amenity for future residents. Results of a two stage Odour Assessment indicated odour effects at the site were not significant. As such, odour was not considered to represent a constraint to planning consent.

A1 Trunk Road, Long Bennington

Odour Assessment in support of a residential development on land off the A1 Trunk Road, Long Bennington. The development was located in the vicinity of a maggot farm growing bait for fishermen. Results of a two stage Odour Assessment indicated that at the location of the proposed dwellings, impacts were not at a level considered to cause loss of amenity as a result of emissions. As such, odour was not considered to represent a constraint to planning consent.

LAUREN MASSINGHAM

Associate Air Quality Consultant

BSc (Hons), CEnv, MIAQM, MIEnvSc

Tel: 0161 706 0075 | Email: lauren.massingham@red-env.co.uk

KEY EXPERIENCE:

Lauren is an Associate with specialist experience in the air quality sector. Her key capabilities include:

- Undertaking and managing a variety of air quality projects in a range of sectors including residential, student accommodation, educational, commercial and industrial projects
- Detailed dispersion modelling of road vehicle and industrial emissions using ADMS-Roads and ADMS-6. Studies have included impact assessment of ground level pollutant and odour concentrations and assessment of suitability of development sites for proposed end-use.
- Project management and co-ordination of Environmental Impact Assessments and scoping reports for developments throughout the UK.
- Co-ordination and management of multi-disciplinary projects and submissions.
- Assessment of fugitive dust impacts from a range of mineral extraction developments.
- Production of air quality mitigation strategies specifically tailored to address issues at individual sites.
- Active STEM Ambassador role, working with local schools to educate about air quality.

SELECT PROJECTS SUMMARY:

Norton Lodge, Malton

An ES Chapter and technical appendix were supplied to support this EIA development. The development comprised a new link road and therefore required multiple assessment scenarios. The Chapter also looked at impacts at ecological designations, impacts with an AQMA, odour from neighbouring facilities and impacts on proposed receptors. The AQMA in Malton was a particular concern for the council. The overall impact was considered to be not significant.

Yorkshire Post Phase 2, Leeds

An Air Quality Assessments to support each of the three proposed towers which form part of the Yorkshire Post Phase 2. These high-rise buildings were proposed for student accommodation and commercial uses. In addition to following LAQM.TG(22) and EPUK&IAQM guidance, the West Yorkshire Low Emissions Strategy (WYLES) Air Quality & Emissions Technical Planning Guidance was followed. Due to the 'Major' development classification in line with the WYLES guidance, damage costs for each tower were calculated. Mitigation measures were suggested. The energy strategy for the development was for a connection to the Leeds PIPES local heating district network. The scheme was approved.

Old Hall Street, Liverpool

An Air Quality Assessment to support a student accommodation development. The scheme is 'car free' and trips generated dispersed to below the threshold once off Old Hall Street. The Site was considered suitable for residential use.

Viadux Phase 2, Manchester

Environmental Impact Assessment to support a high-rise residential led scheme in the city centre. The assessment included both operational and construction phase impacts. Impacts with both phases were considered to be 'not significant'. Additionally, in line with Manchester City Council Air Quality Guidance a Damage Cost calculation was included to ensure that sufficient mitigation was included to reduce air quality impacts as much as possible.

Plot 9b, First Street, Manchester

An ES Chapter to support the EIA development on land off First Street. The assessment included operational and construction phase impacts, in addition to modelling to ensure site suitability. Additionally, in line with Manchester City Council Air Quality Guidance a Damage Cost calculation was included to ensure that sufficient mitigation was included to reduce air quality impacts as much as possible. This included improving footpaths so that the site linked to other Plots within the wider First Street development. The Chapter concluded that impacts were considered not significant.

Winwick Road, Warrington

Air Quality Assessment for the proposed B2/B8 development in Warrington. Changes in pollution levels were considered at sensitive receptors as a result of trips generated and their distribution across the local area. Results of the dispersion modelling study indicated air quality impacts as a result of the scheme were not significant.